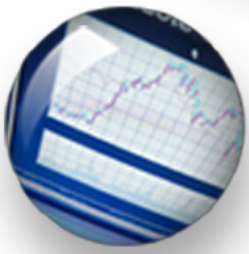
DEMIDEC RESOURCES

ECON WORKBOOK

Jessica Raasch



2008-2009 Edition

Economics Workbook

2008-2009: Latin America

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I. Basics of Economics

This section covers everything in Section I of the curriculum outline except for topics related to trade, which are found in Section IV. Material on the Mexican Economy is contained in its own workbook.

Microeconomics and Macroeconomics……..

Economics is a study of decision-making. It can be divided into two broad areas of study. In **microeconomics**, we study the economic decision-making of the **individual** and the consequences of those decisions. We isolate individual markets and we try to explain how they function and what will cause their behavior to change. In **macroeconomics**, we study the behavior of an economy as an **aggregate**, or as a whole. We might try to measure the size of the economy or we might try to assess its health. We might also try to predict how a policy change could affect the economy.

1.01 THINK FAST

Spit it out. In five or fewer words, what is economics?

_____

1.02 CATEGORIZATION

The big picture. Below is a list of topics in the study of economics. Determine whether each topic is in the area of microeconomics ("Micro") or macroeconomics ("Macro"). Circle your answer choices.

Ex.	(Micro)	Macro	How an individual decides which brand of cereal to buy
1.	Micro	Macro	How the Federal Reserve influences consumer spending in the U.S.
2.	Micro	Macro	How a household decides which brand of laundry detergent to buy
3.	Micro	Macro	How a firm decides when to go out of business
4.	Micro	Macro	How debt affects the income gap among Americans
5.	Micro	Macro	How new parents decide whether to work or stay home with their children

The Basic Economic Problem……..……

We begin our study of economics with the problem of scarcity. We experience scarcity when there is less of something available to us than we'd like. It might be food, time, or just about anything. Even if a resource is given away for free, it is scarce if people want more of it than what is available to them.

Scarcity and Choice

Scarcity is the basic problem of economics. We can't have everything we want, so we're forced to choose among alternatives. In other words, scarcity forces us to make **choices**. Economics is the study of how we make those choices. When we study economics, we presume people are dealing with scarcity; we presume they are constantly struggling to balance **unlimited wants** with **limited resources**.

Some resources seem to be abundantly available to everyone, so we have trouble seeing them as "limited." These are termed **free goods**. Air is the most common example of a free good, because we all breathe as much air as we need. However, an economist will tell you nothing is free, not even air (and certainly not oxygen, which is now sold in small, presumably invigorating quantities at oxygen bars.) If we give it enough thought, we see that everything has a cost. As the saying goes, "**There Ain't No Such Thing As A Free Lunch" (TANSTAAFL)**. Even the air we breathe has a price tag. After all, we pay taxes to support the environmental regulations that help keep our air breathable.

1.03 FILL-IN

Fill 'er up, Phillip . Complete these statements by writing in the missing words. The first statement has been completed for you.

1. There ain't no such thing as a free _____lunch_____(TANSTAAFL).
2. Economics is based on the assumption that people have unlimited _____ and limited _____.
3. The basic problem of economics is _____.
4. If less of a resource is available to us than we like, then the resource is said to be _____.
5. The most common example of a free good is _____.

Opportunity Cost and Trade-offs……

In order to make use of our scarce resources, we have to choose to have some things and to do without others. A **trade-off** is a decision to have something and to do without something else.

Suppose you choose to go on a cruise, rather than take a backpacking trip to Machu Picchu. Your decision is a trade-off. By opting for the cruise, you decide to have the luxury of sleeping in late, eating extravagant meals, and breathing the salty sea air. You also decide to do without the opportunity to walk among ancient Incan ruins and to breathe the crisp mountain air of the Andes.

The **opportunity cost** of a decision is the value of the best alternative not chosen—the value of the thing you could have had, but didn't. If backpacking to Machu Picchu is the best alternative to a cruise, then the opportunity cost of the cruise is the value to you of the backpacking trip. It's the cost of the lost opportunity.

When evaluating alternative solutions to a problem, economists want to consider all the relevant costs involved. Some costs are obvious because they require an outlay of cash. Others are less obvious. You're probably familiar with what an economist would call an "accounting cost." It's the amount that is actually paid in exchange for a good or service; it's also known as **explicit cost**. However, an economist is most concerned with the **economic cost** of a decision. The economic cost of a decision is the complete cost, which is a measure of its net economic impact. This includes the accounting cost *and* the opportunity cost, as well as other less-obvious costs, like the value of lost product quality or the value of a change in employee morale. All costs that are not accounting costs are also known as **implicit costs**. Of course, the value of a

change in quality can be difficult to quantify, so the economic cost of a decision is not something we can easily express in dollars.

1.04 IN BRIEF

Short answer. Write a brief response to each question below.

1. What is the basic problem of economics?

   _____

2. According to economists, why do people have to make choices?

   _____

3. Why do economists say "There ain't no such thing as a free lunch"?

   _____

4. What is a free good?

   _____

5. What is a trade-off?

   _____

6. What is the opportunity cost of a decision?

   _____

7. What is the difference between accounting cost and economic cost?

   _____

8. Why is it difficult to quantify the economic cost of a decision?

   _____

   _____

TEST-TAKING TIP

In your mind, you should link the terms "trade-off" and "opportunity cost." Also, link "opportunity cost" with the phrases "did not choose" and "chose not to." On an exam, if you see one term from a linked pair in a question stem, the other one could be lurking in the correct answer choice. Here is an example:

Bob made a trade-off when he chose a job located close to his home over a job he loved. The value of working a job he loved was his

a. alternative cost
b. economic cost
c. opportunity cost
d. marginal benefit
e. marginal cost

1.05 EXAM PRACTICE

"Is this gonna be on the test?" The questions below are similar to those that have appeared on Decathlon exams in the past. In this exercise, you'll practice outsmarting them. First, in each question, underline the phrases you know to link together. Then, circle the letter of the correct answer choice.

1. The cost of a trade-off is known as its

   a. opportunity cost
   b. trade-off cost
   c. explicit price
   d. real value
   e. future cost

2. A firm can produce T-shirts or sweatshirts. The opportunity cost of the firm's decision to produce T-shirts is BEST measured by the

   a. fixed costs of T-shirt production
   b. variable costs of T-shirt production
   c. price of the T-shirts produced
   d. number of sweatshirts the firm chose not to produce
   e. total costs of T-shirt production

1.06 MATCHING

It's better than clashing. Match the letter of each term in the column on the left to the BEST description in the column on the right. Write your answers in the blanks provided. An example has been completed for you.

a. opportunity cost
b. scarcity
c. economic cost
d. increase in insanity
e. free good
f. trade-off
g. individual
h. aggregate

1. _____ a decision to have more of one thing and less of another
2. _____ the scale of the study of microeconomics
3. **d** a negative externality of working for DemiDec for seven years
4. _____ equal to the value of the best alternative not taken
5. _____ a measure of the net economic impact of an action
6. _____ the scale of the focus of macroeconomics
7. _____ available in a sufficient quantity to anyone who wants it
8. _____ the reason we study economics

The Production of Goods and Services…….……

A trade-off decision is not usually as simple as choosing which vacation to take. Sometimes we have to decide whether to have more of something and less of something else, or vice versa. A firm might wish to decide whether to produce more of one product or another. A nation might have to decide whether to produce more tanks or more medical supplies.

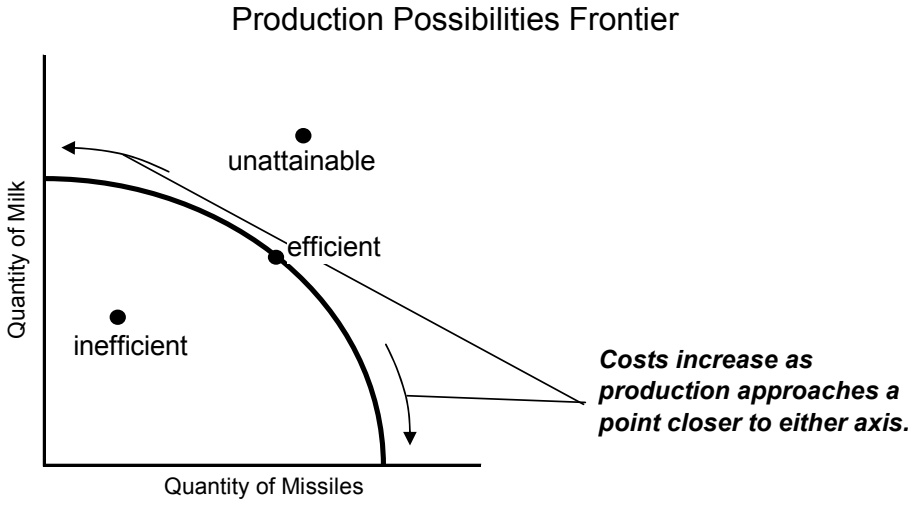
The Production Possibilities Frontier

We use the **Production Possibilities Frontier (PPF)** to help us make trade-off decisions. The PPF graphically represents all possible combinations in which two given goods or services can be produced. Typically, the frontier is curved, bowed outward from the origin. For any point along the frontier, the x-coordinate represents a quantity of one good that can be produced, and the y-coordinate represents the corresponding quantity of the other good, assuming all resources are fully utilized. By moving from one point on the curve to another, we make a **trade-off**: we sacrifice some of one good in order to produce more of the other.

Production at any point along the PPF is attainable and **efficient**, because all available resources are being used. Production at a point inside the frontier is attainable but **inefficient**, because more of either good could be produced. Production at a point beyond the frontier is impossible to attain. After all, the frontier represents production *possibilities*. Later in this workbook, we'll discuss how a nation can trade to reach a point of *consumption* outside the frontier.

As production approaches a point closer to either end of the frontier, the trade-offs become increasingly costly. A small increase in the production of one type of good will result in a substantial decrease in the production of the alternative type of good. This **law of increasing opportunity costs** is what causes the PPF to curve. Theoretically, if the frontier is a straight line with a slope exactly equal to -1, then there are no increasing opportunity costs. In other words, an increase in the production of one of good will result in an equal decrease in the production of the other good. This can happen when the two goods in consideration are very similar.

When the PPF represents a nation's production possibilities, one axis represents the production of capital goods and the other represents the production of consumer goods. In most modern economics texts, you'll see this trade-off represented as "guns and butter." At DemiDec, we prefer to call it "missiles and milk." In either case, the two goods are very different, so the opportunity cost of a trade-off is very high. The resources used to make one type of good may not be very useful for the production of the other good. As we say in the DemiDec Economics Resource, "It is easy to make milk out of cows; it is more difficult to make nuclear missiles out of cows."



The PPF is only a graphical representation of the possibilities of production. We don't use the PPF alone to make a decision. After all, **we use goods and services to satisfy wants**, but everyone has different wants. The decision-makers in one nation might want a strong military, but the decision-makers in another nation might want an effective healthcare system. Even if both countries have the same PPF, each might choose to produce at a different point. Each will choose a different combination of capital and consumer goods to satisfy its different wants.

1.07 TRUE OR FALSE

The truth is out there. Below are statements about the PPF. Determine whether each statement is true or false, then add any necessary corrections to make the false statements true.

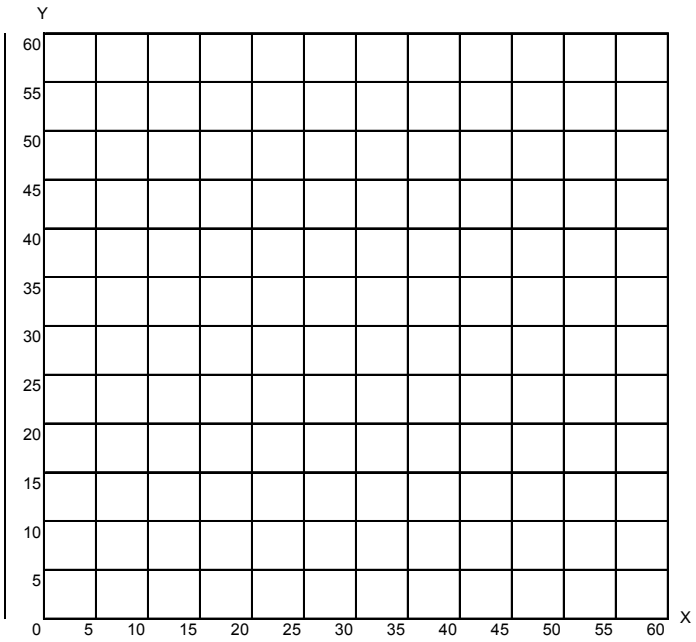
1. T F Every point along the PPF is efficient.
2. T F On the PPF, as production approaches a point closer to either axis, the opportunity cost of a trade-off decreases.
3. T F Without trade, a point above or to the right of the PPF is unattainable.
4. T F If the PPF is a straight line with a slope of -1, the two goods concerned are very different.
5. T F The PPF is often used to graphically represent the trade-off between the production of capital goods and the production of missiles.
6. T F A movement along the PPF represents a trade-off.
7. T F The law of increasing opportunity costs explains why the PPF is usually curved.

1.08 GRAPHING

Conquer a new frontier. On the left, I've given you production possibilities data for Milk and Missiles in the country of Decalon. Plot the data from the table into the graph on the right, using the y-axis for the consumer good and the x-axis for the capital good. Connect the dots to form a frontier. Also, be sure to label the axes.

Production Possibilities in Decalon

Milk (thousands of gallons)	Missiles
60	0
58	15
50	30
35	45
20	52
15	53
0	55



1.09 THINK FAST!

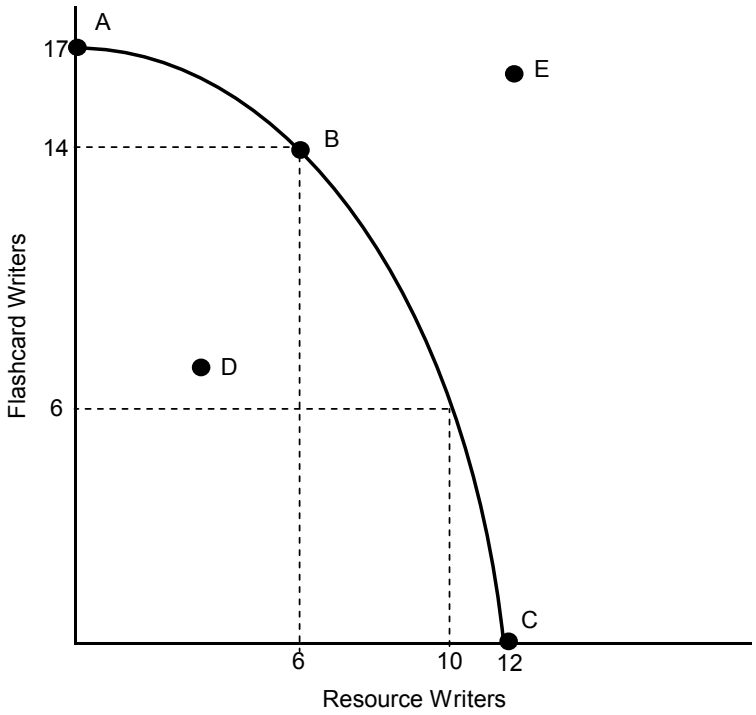
No, faster! What law is demonstrated by the expression, "It is easy to make milk out of cows; it is more difficult to make nuclear missiles out of cows"?

1.10 CASE STUDY

You're not really expecting something witty here, are you? Read the scenario below, and then complete the exercises that follow.

Scenario: *Spring is here at last. While Daniel is scrambling to attend state competitions and negotiate deals in Korea, applications from prospective interns are pouring in at DemiDec every day. Returning writers from the previous DemiDec summer have already filled over half the positions at DemiDec. Daniel is working at selecting the other half to write the resources and flashcards. As he searches through a large pool of talent, he must take care to hire within his budget. An astute economist, Daniel is quick to analyze the relationships of the various positions at DemiDec. On the back of a banquet program, in between webcasting the results, he drafts this "Personnel Possibilities Frontier":*

Personnel Possibilities



A. Match the letter of each point on the PPF above to the description that best identifies it.

1. _____ Daniel will not be utilizing his entire Flashcard and Resource Writer budget. He could easily hire more of each.
2. _____ Daniel will hire a combination of BOTH Resource Writers and Flashcard Writers, but there will be more Flashcard Writers in the mix.
3. _____ Daniel hires ONLY Resource Writers, thinking he will talk his friends from school into coming over for the Karaoke Party of the Century, and, later, guilt them into writing the flashcards for him.
4. _____ Assuming there will be no sudden increase in subscriptions, this point is not within DemiDec's budget.
5. _____ Daniel hires ONLY Flashcard Writers.

B. Use the PPF to answer the following questions.

1. Suppose Daniel had originally expected to hire six new Resource Writers this year. After reviewing the applicant pool, he decides to hire 10 new Resource Writers instead. What is the opportunity cost of his decision (expressed in Flashcard Writers)?

   _____

2. Can Daniel hire 14 Resource Writers with his current budget?

   _____

3. According to Daniel's "PPF," what is the maximum number of Flashcard Writers he could hire?

   _____

Productive Resources……...

In order to create wealth, we have to produce something and sell it. An economics professor produces an economics lecture, which is a service; the Backstreet Boys produce concerts, which are also (except maybe to society) services. At DemiDec, we produce goods, such as economics workbooks. In either case, no one produces anything from nothing. Just as workbooks and lectures are the output of the production process, there are inputs, too. For instance, to produce this workbook, I'm writing on a notebook computer, and I'm using a few different programs to create the text and the visual aids. Eventually, the finished product must be published, which usually requires a printer, some toner, and some paper. The alternate process of publishing the workbook on-line will require the time and knowledge of the person who converts the file and makes it available for readers to download, as well as a computer server somewhere and access to bandwidth. And of course, there's my contribution—my knowledge, experience, creativity, and ability (such as it is.) All those things—materials, software, knowledge, and experience—are the productive resources we use to create an economics workbook.

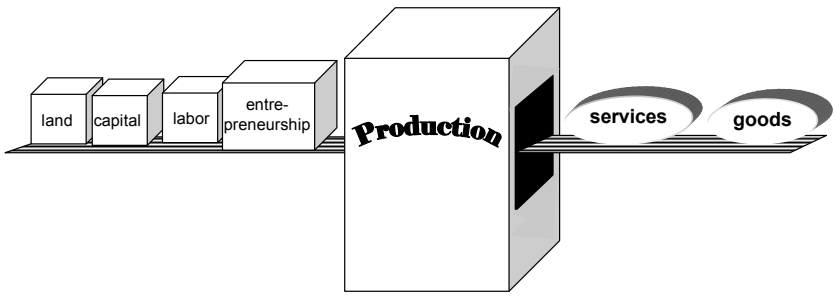
1.11 CATEGORIZATION

At least there's a 50-50 chance. Decide whether each of the following products is a good or a service. Then circle the appropriate choice. An example is provided.

	(Good)	Service	Dolphin Costume
1.	Good	Service	Economics Lecture
2.	Good	Service	Backstreet Boys Concert
3.	Good	Service	Tae-bo Video
4.	Good	Service	Three-Hour Tour
5.	Good	Service	Fuzzy Bunny Slippers

The Factors of Production

In the language of economics, the inputs to the production process are called the "factors of production." There are four **factors of production**: **land**, **labor**, **capital**, and **entrepreneurship**. By definition, the factors are the **scarce resources** we use to produce goods and services. Ultimately, we use them to create wealth.



The factors of prodution are the inputs to the production process.

Natural resources include land and raw goods in their natural environment, like the coal in a coal mine or the trees in a forest. If the coal has already been mined, we can't call it a "natural resource" anymore. If the trees have already been cut down and turned into lumber, they don't count either. Sometimes, natural resources are simply referred to as "land." We pay **rent** for the use of land.

Capital resources are what we produce to help us produce other things. They include buildings, equipment, vehicles, machinery, and other physical assets. According to some economists, they also include intermediate goods, like lumber. By that definition, after oil has been extracted and refined, we should consider it a capital resource. In some texts, capital resources are simply called "capital." We pay **interest** for the use of capital.

We can divide capital into "physical capital" and "human capital," where "physical capital" includes the things I've just discussed, and "human capital" includes anything that improves the quality of the workforce, such as education or training. More specifically, human capital consists of the knowledge and skill people acquire to enhance their productivity, such as a political operative's grasp of Rovian tactics, a cab driver's knowledge of streets or your understanding of economics.

In most texts, **human resources** are simply called "**labor**," and I suspect you'll prefer that term, too. Labor is the human part of the production process. That is, it's the physical and mental efforts of humans in the production process. We pay **wages** in exchange for labor; put another way, we pay wages to laborers for the use of their time.

Entrepreneurial resources are the resources we use to either improve the output of the production process or to create new output. In some texts, entrepreneurial resources are simply called "entrepreneurship," and I suspect you'll prefer to use that term. Entrepreneurship consists of the ability to combine the other factors of production in a new way, or to achieve new results. It also consists of a person's willingness to take risks in order to earn a profit. Just as laborers earn wages, entrepreneurs earn **profits**.

Keep in mind that human capital is not usually counted as part of capital in general, as it is not paid interest. Instead, when actually used to produce a good or service, it is referred to as part of labor and earns a wage; when it is employed entrepreneurially, it earns a profit.

The Factors of Production

Natural Resources	Capital Resources

• earn **rent**
• also called **"land"**
• examples:
  • land
  • anything found in its natural form on land
  • raw materials
	• earn **interest**
	• also called **"capital"**
	• examples:
	  • buildings
	  • vehicles
	  • equipment
	  • intermediate goods

Human Resources	Entrepreneurial Resources

• earn **wages**
• also called **"labor"**
• include:
  • physical efforts of humans
  • mental efforts of humans
	• earn **profits**
	• also called **"entrepreneurship"**
	• include:
	  • the ability to combine the other factors together in a better way, or to produce new results
	  • the willingness to take risks

Unfortunately, the inputs to the production process do not always fall easily into four, clear-cut categories. For example, we "produce" farmland to grow crops; shouldn't that make it a "capital resource"? Or should it be a "natural resource"?

1.12 CATEGORIZATION

Be resourceful. Below is a list of inputs to the production process. For each input, indicate which of the four factors of production is represented. The first one has been answered for you. (Hint: for this exercise, "human capital" is counted as part of labor, or human resources.

1. natural resources — an oil reserve
2. _____ — the initiative to combine water, lemons, and sugar to make lemonade for sale
3. _____ — a rain forest
4. _____ — buildings
5. _____ — the knowledge and training required to answer phones and schedule appointments for a dentist's office
6. _____ — machinery
7. _____ — a laborer's training
8. _____ — the knowledge needed to design advertising campaign
9. _____ — lumber
10. _____ — the land on which a factory is built
11. _____ — the ability to create and operate a new summer camp
12. _____ — the ability to organize and train writers to produce exams, workbooks, flashcards, and other materials
13. _____ — a printing press
14. _____ — raw goods
15. _____ — a mainframe computer

1.13 EXAM PRACTICE

On the test. The question below is similar to one you might see on exam day. First, cross out the factors of production you have learned. Then, circle the letter of the correct answer choice.

Which of the following is NOT a factor of production?

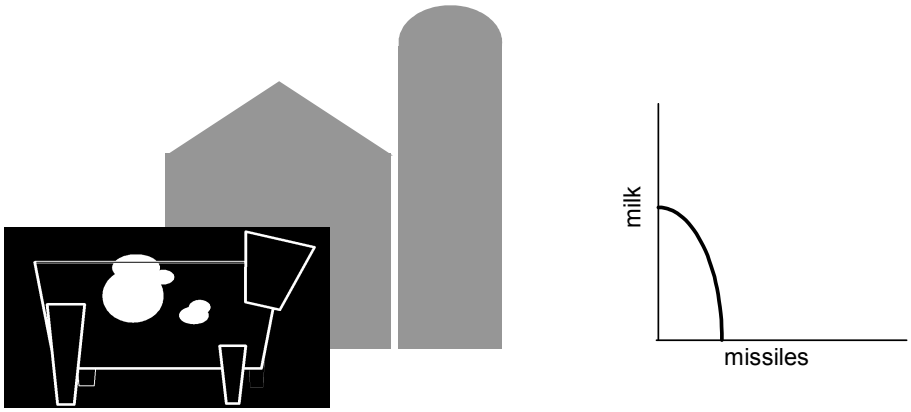
a. land
b. capital
c. money
d. entrepreneurship
e. labor

Manipulating the Production Possibilities Frontier……

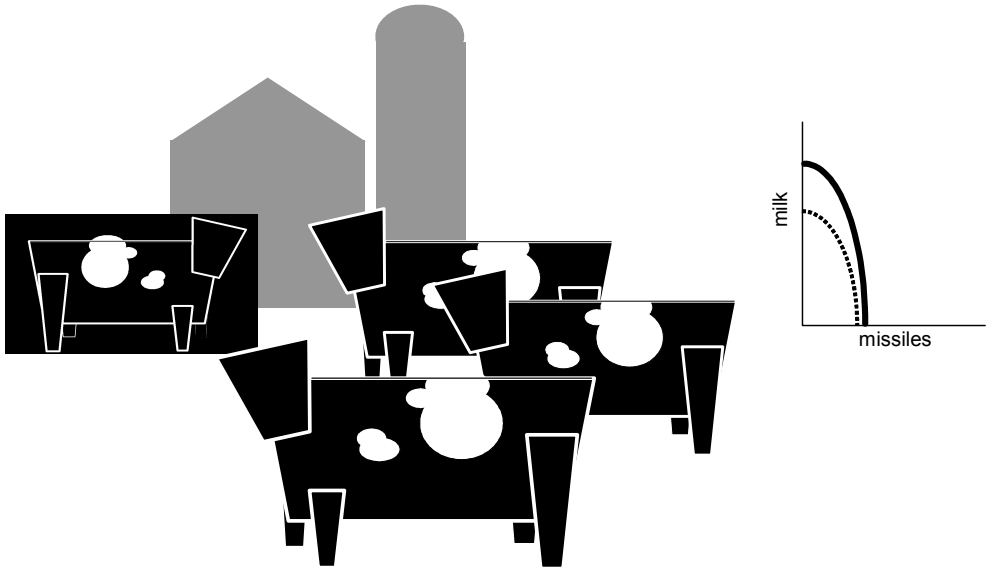
The factors of production determine the shape and position of the Production Possibilities Frontier. If the factors of production increase or improve (often due to advances in technology), the frontier shifts outward into a position that was previously unattainable. On the other hand, if the factors of production decrease or suffer a loss of quality, the frontier shifts inward. If there is a severe shortage of one factor, the shape of the frontier may change.

Let's consider an example. Suppose a successful dairy farm buys some new cows. A factor of the farm's production increases and the farm is able to produce more milk. A Production Possibilities Frontier would

reflect the increase by expanding outward; it would move to show the possibility of producing a higher quantity of milk.



An increase in a factor of production will cause the PPF to shift outward.



Now suppose the cows become angry and decide to take action. They form a livestock union and refuse to give milk until the quality of their feed improves. A factor of production decreases dramatically. Only a few cows are left to produce non-union milk. A PPF would reflect this change by shifting inward; it would move to show the lowered possibility of milk production.

1.14 TRUE OR FALSE

Truth hurts. Below is a list of statements about the topics we've covered. Determine whether each statement is true or false. For true statements, circle "T." For false statements, circle "F" and then correct the statements to make them true.

1. T F As factors of production, education and training are considered physical capital.
2. T F The basic problem of economics is neo-conservatism.
3. T F The study of economics assumes humans have unlimited wants and limited resources with which to satisfy those wants.
4. T F The four factors of production are technology, strategy, savvy, and sapience.

5. T F An increase in a factor of production will cause the PPF to expand outward.
6. T F In the language of economics, "entrepreneurship" is something that creates wealth.
7. T F TANSTAAFL stands for, "Economists have a poor sense of humor."
8. T F Natural resources include fossil fuels, trees, and coal mines.

1.15 MATCHING

Match-ismo. Match the letter of each event, in the column on the left, to the BEST description of how it would affect the PPF, in the column on the right. You may match more than one event to each description.

a. A farmer acquires new land.
b. A change in technology allows a printer to increase his daily productivity by 20 percent.
c. An auto manufacturer decides to produce more trucks at the expense of having to produce fewer cars. Some of the factory workers will have to be moved to new areas.
d. A shoemaker hires an assistant.
e. Dairy cows are upset when they realize they've been working to produce nuclear missiles. They organize an escape and run away to freedom.
f. Environmental activists set up camp in an old forest, acting as human shields to protect trees from logging companies.
g. A pizzeria begins accepting on-line orders for delivery.
h. A publisher determines that his printing cost for sappy romance novels is exactly equal to his printing cost for mystery novels, as long as both are printed as trade paperbacks.
i. A workbook writer finally finished her B.S. in economics.
j. A chemical fire destroys a factory building and most of the machinery inside.

1. ___ the PPF shifts outward
2. ___ the PPF shifts inward
3. ___ no change in the PPF
4. ___ the PPF is a straight line

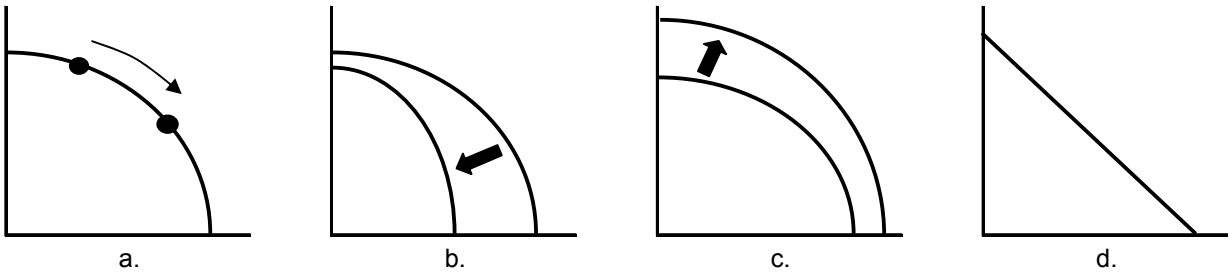
1.16 SENTENCE COMPLETION

Picky, picky, picky. Circle the answer choice that BEST completes each statement below.

1. An increase in a factor of production, other factors held constant, will result in an (OUTWARD, INWARD) shift of the Production Possibilities Frontier.
2. Movement along the PPF represents a(n) (EXPANSION, TRADE-OFF) in production possibilities.
3. A decrease in a factor of production, other factors held constant, will result in an (OUTWARD, INWARD) shift of the Production Possibilities Frontier.

1.17 MATCHING

Explain yourself. Match the letter of each drawing to the explanation it BEST represents.



1. _____ the result of an improvement in technology
2. _____ production possibilities for two goods that are very similar
3. _____ a trade-off
4. _____ the result of a loss of quality in one of the factors of production

Present, Future, Intended, and Unintended Consequences…….

Every decision we make has consequences. Some can be seen as soon as a decision has been made; others can't be seen until much later. Some consequences are desirable, but some are undesirable.

Economic Consequences

Present consequences are the immediate consequences of a decision. With present consequences, we can often see the cause-and-effect relationship between the decision that was made and the consequence that resulted. In fact, we usually expect the present consequences of a decision. A politician hoping to be re-elected must produce results that are visible before his or her next election.

As you might have guessed, **future consequences** are consequences further in the future than present consequences. When enough time elapses, we may have difficulty seeing the relationship between a decision that is made and its future consequences. We don't always expect the future consequences of a decision.

Intended consequences are the desired results of a decision. They are the reason a decision is made. Often, intended consequences are present consequences, but the terms are not necessarily synonymous. In the example of "price ceilings" on rent, the intended consequence was the present consequence; the laws were passed so that tenants could afford to live. In another example, the Federal Deposit Insurance Corporation (FDIC) was created to insure bank deposits, up to a certain amount. The intended consequence was that people would feel safe depositing their money in a bank knowing that even if the bank fails, they'll get their money back. It would therefore prevent, in the future, another run on the banks like the one that precipitated the Great Depression.

Unintended consequences are the unwanted results of a decision. Sometimes, we expect certain unintended consequences, but the intended consequences outweigh them and the decision is made anyway. Other times, unintended consequences are future consequences.

1.18 IN BRIEF

Short answer. Write a brief response to each of the following questions.

1. What is a present consequence?

_____

2. What is a future consequence?

   _____

3. What is an intended consequence?

   _____

4. What is an unintended consequence?

   _____

5. Why might a politician, who is facing re-election, ignore the future consequences of a decision?

   _____

6. When we expect a decision to have certain unintended consequences, why might we make it anyway?

   _____

1.19 APPLYING KEY CONCEPTS

Suffer the consequences. The situation described below has happened in the fictitious city of Demilonia. Read the situation. Identify the problem and its solution. Then list the present, future, intended, and unintended consequences of that solution.

Situation: *People complain that they can't afford to live because rent is too high. The Demilonia City Council enacts a rent "ceiling," limiting the maximum amount of rent a landlord may charge for certain properties. Most Demilonians can afford the new dirt-cheap "ceiling" rate. Eventually, landlords realize they have no need to maintain the restricted properties—they don't generate any income, and the people living there can't afford to live anywhere else. The landlords completely ignore the restricted properties. They focus all their time and money on nicer, profit-yielding investments. After ten years, the rent-controlled buildings are falling apart. They're unsafe and unsanitary and the only tenants are drug dealers.*	
problem:	**solution:**
intended consequence(s):	**unintended consequence(s):**
present consequence(s):	**future consequence(s):**

Effective Decision-Making (I.B)……

One approach to economic decision-making is to weigh the benefits of a solution against its known costs. This approach is called **cost-benefit analysis**. Costs and benefits do not necessarily have to be quantifiable. The benefits of accepting a particular job offer might include that the job is close to home. The costs might include a reduction in salary.

1.20 THINK FAST

Hurry up! How do we conduct a benefit-cost analysis?

_____

_____

Marginal Benefits and Marginal Costs……..……..

Economic decision-making rarely involves "all-or-nothing" choices. One of the most important economic decisions we make concerns the question of "How much?" To answer this question, we have to decide whether to produce a little more or a little less, or whether to buy a little more or a little less.

The Margin

People make decisions at the **margin**. The margin is the difference between two alternatives. The difference can be expressed in terms of marginal cost, which is the difference in cost between the two alternatives, or in terms of marginal benefit, which is the difference between the benefits of two alternatives.

When economists speak of **marginal cost**, they are usually referring to the cost of **one more unit** of production. The **marginal benefit** is the benefit of one more unit of production. If we use benefit-cost analysis to make a production decision at the margin, then we weigh the costs of one more unit of production against the benefits of one more unit of production.

When we make decisions, sometimes we are tempted to take too much into consideration. Marginal decision-making requires that we consider only the marginal benefits and costs. We have to ignore **sunk costs**, or costs that cannot be recovered. Sunk costs typically include money that has already been spent. For example, the fee you paid to originate a cell phone contract will not be returned to you, regardless of whether you switch carriers or stay with the one you already have. Once you have paid the fee, no amount of decision-making will return your money to you. When you consider switching carriers, you'll waste your time if you worry about the lost start-up fee. No amount of decision-making will avoid sunk costs, so we do not consider them when we make a marginal decision.

1.21 APPLYING KEY CONCEPTS

Practice makes perfect. Below is a list of economic decisions and the reasons why they were made. For each decision, identify the marginal benefit of the alternative that was chosen. Keep in mind that the margin is the difference between two alternatives.

1. Billy orders a combo meal at McDonald's. He decides to Super-Size his meal because it only costs him 79 cents extra to have a few more ounces of French fries and soda.

   _____

2. Wyatt wants to take his girlfriend to see a movie. He decides to take her to a matinee in order to save a few bucks off the regular price of admission.

   _____

3. Evan turns down an offer from the University of Southern California and attends a state university in a snowy, mountain town in the southwest. Evan explains: "Snowboarding is just 20 minutes outside of town."

   _____

1.22 THINK FAST!

What is the margin?

_____

1.23 CASE STUDY

Read the scenario below, and then complete the exercises that follow.

Scenario: *WidgetWorks, Inc. specializes in Red Widgets. The widget market is thriving. Currently, WidgetWorks is producing 140 Red Widgets per day. Their staff accountant claims the firm can increase its revenue by turning out a few more Red Widgets per day. But before WidgetWorks makes a decision, they will need to conduct a benefit-cost analysis. To maximize profit, WidgetWorks must produce at a point at which the benefit equals or exceeds the cost.*

After some research, the accountant has prepared this table of the sales price (marginal benefit) and marginal cost associated with each additional unit of production.

Red Widget #	Marginal Cost	Sales Price
1	1	12
2	2	12
3	3	12
4	4	12
5	5	12
6	6	12
7	7	12
8	9	12
9	11	12
10	13	12

1. If the benefit of production must be worth the cost, how many more Red Widgets could WidgetWorks produce?

   _____

2. How many total Red Widgets could WidgetWorks produce before the marginal cost of another will exceed its marginal benefit?

   _____

3. Regardless of how many Red Widgets WidgetWorks produces, the terms of the lease of their plant hold that they will pay $7500 in rent each month. For WidgetWorks, what type of cost does rent represent?

   _____

1.24 APPLYING KEY CONCEPTS

Widgets run amuck. In this exercise, you have been given the marginal cost and the marginal benefit for each additional Widget. Determine how many units should be produced beyond current production levels.

1.

Green Widget #	Marginal Cost	Marginal Benefit
1	8	15
2	10	15
3	13	15
4	17	15

How many more Green Widgets should be produced?

_____

2.

Brown Widget #	Marginal Cost	Marginal Benefit
1	10	12
2	13	12
3	16	12
4	18	12

How many more Brown Widgets should be produced?

_____

Marginal Utility……

Utility is the ability of a good or service to satisfy a want. It is the amount of satisfaction a consumer receives from a good or service—a measure of happiness, if you will. **Marginal utility** is the ability of an additional unit of a good or service to satisfy a consumer's want. In theory, as we consume more units of a good or service, we become less satisfied by each additional unit we consume. This is the economic principle of **diminishing marginal utility.** If we consider how we eat, diminishing marginal utility is easy to understand: we eat until we're full. Eating after we're full can even result in negative marginal utility (discomfort, and even pain!). Consumers act this way about buying most goods, too. What can you do with a second or third copy of the same game for your Nintendo?

Naturally, utility is entirely subjective. It is not easily quantified, but I find it helpful to think of the **"util"** as a single unit of utility. Remember: all consumers will try to maximize their total utility.

1.25 CASE STUDY

Shopping spree in Singapore.[1] Read each scenario and answer the questions that follow.

1. Suppose you're standing between a case of highlighters and a case of correction tape. Both are free for the taking, but you really aren't desperate to have a case of either item. The units of utility you'll get from obtaining (i.e. consuming) each good, one unit at a time, are as follows:

Highlighters		Correction Tape	
#	MU (in "utils")	#	MU (in "utils")
1	50	1	45
2	26	2	21
3	10	3	12

   What is the first item you'll take? _____

2. Now suppose you're in your friend's café and he has told you to help yourself to espresso drinks and ice cream. The units of utility you'll get from consuming each good, one unit at a time, are as follows:

Espresso Drinks		Cups of Ice Cream	
#	MU (in "utils")	#	MU (in "utils")
1	150	1	60
2	120	2	40
3	27	3	20

   What are the first three goods you'll take (in order)?

   _____

Individual and Social Goals……

Ultimately, economists hope to explain how the economy works. Unfortunately, almost every economist has a different understanding of the economy, a distinct opinion about what our economic goals ought to be and a proprietary prescription for how we ought to pursue them. Naturally, some of what you'll read about economics is factual, but much of it is not. As you study economics, you'll need to be able to spot an opinion when you see it.

Positive Economics and Normative Economics

There are two kinds of statements about economics. A **positive economic** statement is one of economic fact or proposed fact that can be tested. It states "what is." When we make a positive statement, we describe what

[1] As competitors in the 2008-2009 World Scholar's Cup will discover, Singapore is aptly described as city-state meets shopping mall. – Daniel

is known or we make inferences from what is known. A positive statement can factually tested—it can be proved or disproved. Also, economic **theories** are stated positively. Theories are stated without biased language, usually in the form of "If X, then Y."

A **normative economics** statement is one of opinion. It may be formed by interpreting the facts, but it can be neither proved nor disproved with facts. A normative statement expresses something that ought to be an economic goal, or how a goal ought to be pursued.

Let's consider an example. Suppose the Bureau of Labor Statistics reports that the unemployment rate is 5.6 percent. If I were to make a positive statement about the report, I might say, "According to the BLS, the unemployment rate is 5.6 percent this month." If I were to make a normative statement, I might say, "Unemployment is too high."

Positive Economics	Normative Economics
fact: "The unemployment rate is 5.6 percent this month."	**opinion:** "The unemployment rate is too high."

1.26 CATEGORIZATION

Are you positive? Determine whether each statement below is positive (P) or normative (N). Circle your answer choices.

1. P N "Congress should approve the new bill to give prescription drug benefits to Medicare recipients."
2. P N "Productivity increased last quarter."
3. P N "The inflation rate in this country is normal."
4. P N "The current administration has created the largest budget deficits since Ronald Reagan's presidency."
5. P N "If the poverty line is raised, then those whose income level is currently at the bottom of the middle class will benefit from a tax break."

TEST-TAKING TIP

On exam day, you should expect to see a question in which you'll have to tell positive economics statements from normative economics statements. Your best bet is to try to spot the normative statements first. Normative statements will contain words like "should," "ought," or "too" (as in "too high"). They also contain adjectives like "normal" or "under-funded." By elimination, you know that if something is not normative, it has to be positive. You'll have to watch for theories, which are usually expressed as "If _____, then _____." Theories are always positive economic statements, as they can be tested.

1.27 EXAM PRACTICE

On the test. The question below is similar to one you might see on exam day. In this exercise, you'll outsmart it. First, in each question, underline the "opinion word" in the answer choices. Next, place an asterisk (*) next to the statement of theory. Finally, circle the letter of the correct answer choice.

Which of the following is a normative economics statement?

a. The unemployment rate is less than five percent.
b. The Federal Reserve implements economic stabilization policies.
c. The Federal Reserve ought to keep the money supply constant.
d. The reserve requirement is over ten percent.
e. If the price increases, then the quantity demanded will increase.

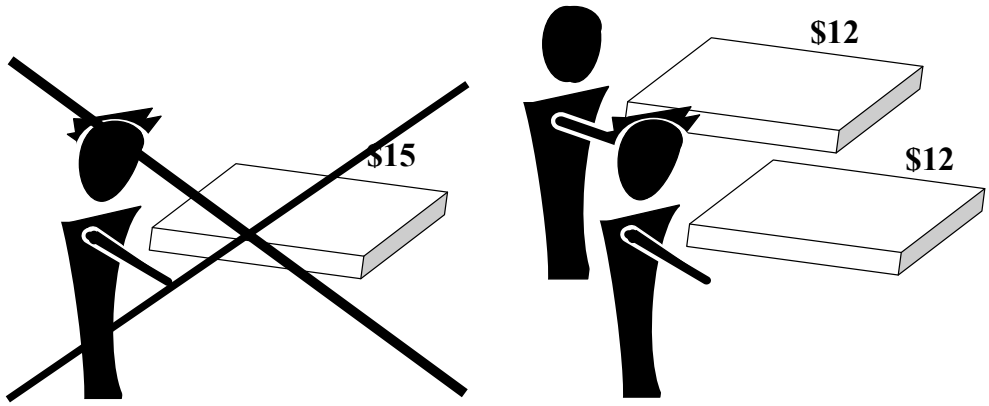
Optimization……

As you study economics, you'll learn that firms aim to maximize profits and minimize expenses; consumers aim to maximize utility; and so forth. In fact, many economic decisions are influenced by optimization.

Optimization is the process of performing an economic activity in the best way—that is, the optimum way—with respect to the goal of the activity.

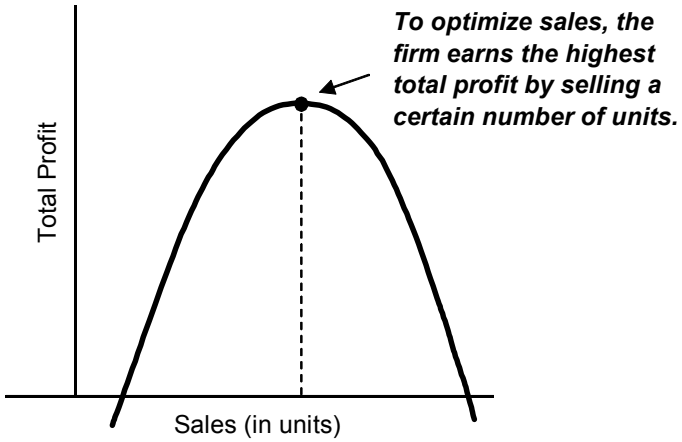
For consumers, optimizing usually means getting the more satisfaction (value) for each dollar—more bang for your buck. Suppose you're hungry for pizza and you know that Joe's Pizzeria will sell you a large pizza for $15. But Josephine's Optimum Pizzas will sell you two large pizzas for $24. Naturally, you'll take a friend to Josephine's, and you'll each get a large pizza for $12. By buying wisely, you optimize your returns on every dollar you spend.

For a firm, optimizing might mean getting the most output out of every unit of input. Perhaps one worker can pick 100 oranges per hour, but ten workers can pick 1200 oranges per hour (or 12 oranges per worker per hour). The owner of the trees will optimize by hiring exactly the number of workers that can pick the most oranges per worker, per hour—without hiring too many.



You optimize your returns by shopping for the best deal.

If you've had some calculus, then you probably know how to optimize a function. You either maximize it or minimize it, within a set of constraints. For example, if you're considering a firm's profit as a function of its sales, then there is some point at which the firm will earn the most profit, and if the firm sells one more unit, it will actually become less efficient, and so it will earn less profit. This is because that unit, to produce, costs more than it sells for.



1.28 IN BRIEF

Keep it short and sweet. Write a brief response to each of the following questions.

1. What is optimization?

   _____

2. How does a consumer optimize his returns when he shops?

   _____

The Basic Economic Questions……..……..

Every economic system aims to solve the problem of scarcity somehow. To handle scarcity, an economic system must answer a few basic questions. Some texts claim there are five questions, some four, some three. The fifth question usually relates to environmental concerns (producing now versus saving resources for later.) For simplicity, however, we will go with three.

Three Fundamental Economic Questions

1. **What to produce (and in what quantity)?** In part, this is the question of whether to produce more capital goods or more consumer goods. It is also the question of whether to produce certain goods, or whether to import them instead. It could be a question of whether to grow corn or to raise cows on the same piece of land.
2. **How to produce?** This is a question of how to make the best use of the factors of production, and whether to improve them. It is a question of how much labor should be used, and how much automation should be used instead. It could be a question of whether to farm organically, or to use the chemicals of conventional agriculture instead.
3. **Who receives the benefits of production?** This is a question of how best to allocate the outputs of the production process, and on what basis. It is a question of how to decide who will consume which goods. Should a person's income affect his ability to survive? What about his age or his gender? And who should receive the better food and shelter? It is also known as the question of **for whom to produce**.

1.29 CATEGORIZATION

This!... Is!... DemiDec! Below is a list of questions about how to solve the problem of scarcity. For each problem, determine which of the fundamental economic questions is being asked. Write "What" for questions of "What to produce," "How" for questions of "How to produce," and "Who" for questions of "Who receives the benefits of production?" The first problem has been completed for you.

1. What "Should we produce more milk or more missiles?"
2. _____ "Should we publish the workbook online or should we print it?"
3. _____ "Why would we produce the missiles ourselves when we can import them so inexpensively?"
4. _____ "Should legislators receive better health insurance than those they represent?"
5. _____ "Should we continue making the amphorae by hand?"
6. _____ "Should we allow farmers to pay a lower wage to migrant workers?"

Economic Systems……..……

An economic system organizes the economic activities of a region. Its purpose is to handle the problem of scarcity. An economic system encompasses everything that governs economic activity, from laws to institutions to accepted practices and behaviors.

Market System

A **market economy** is sometimes called a **capitalist economy**, a **free market economy**, or a **free enterprise** system. The market system is so named because the decision-making is motivated by what happens in markets. In a pure market system, **resources, goods, and services are allocated entirely by a price system**. In other words, the market price of an item determines who will get it. Those who can afford to buy a resource will do so; those who can't, won't. In a pure market system, an official economic decision-maker is unnecessary. This economic environment can be harsh because, like other goods and services, food and shelter are allocated by the price system. Those who can afford to pay for food will eat, and those who can't, won't. The vulnerable (e.g. consumers, laborers) are not protected, but those with sharp entrepreneurial skill are rewarded.

Perhaps the most critical feature of a market economy is the presence of **competition**. Competition generally brings the lowest price, the best service and the best quality to consumers. Furthermore, competition among employers attracts the best employees to the most successful firms. (Thus, some claim that Google is "sucking dry" the talent market available to its less renowned competitors, such as Yahoo!) If a market economy is to be effective, it must encourage competition.

In a market system, consumers and producers are **free to choose** what to produce and consume, and in what quantity. The system is propagated by **economic incentives**, such as the individual's ability to improve his standard of living. Individuals and economic entities **voluntarily exchange** resources, goods, and services.

Private property is an important feature of a market system. In a pure market system, individuals and private corporations own all the resources, goods, and services. Individuals are free to invest their resources however they like. **Individuals make decisions about what to produce and how to produce it.** The system is **profit-driven**, so resource owners invest in the things they expect to be most profitable.

Command System

A **command economy** is sometimes called a **planned economy**, because decisions are made by a central authority that works to fulfill an economic "plan." The interest of "the plan" precedes the private interests of the people. **A central authority makes decisions about what to produce, how to produce, and how to allocate the benefits of production.** Both the allocation of resources and the distribution of goods and services are determined by a central authority, acting to fulfill "the plan." In a typical planned system, **all resources, goods and services are owned by everyone** (i.e. by the government) and controlled by a central authority. In **communism**, the central authority tends to be totalitarian; in **socialism**, the central authority may be a freely elected government or its representatives.

Mixed Market System

In the real world, there are no pure economic systems. The systems you've just read about are only theoretical models. Rigid command systems sometimes deviate from their plans in order to uphold traditions, or for practical reasons. "Free market" systems are regulated to varying degrees by governments.

The U.S. system is called a **mixed market system**. It resembles a market system, but decision-making doesn't all happen in markets. Most goods are privately owned, but some are publicly owned. Goods and services are generally allocated by the **price system**, but most **markets are regulated** so the economic environment is not as harsh as in a pure market system. Also, **rights to intellectual property are protected**, so new ideas have a chance to be profitable. Individuals and firms aim to earn **profit**, but through taxation, their **income is partially redistributed**.

1.30 IN BRIEF

Get ready for the debate. Write a brief response to each of the following questions.

1. What is the most important feature of a pure market system?

   _____

2. Why is a command economy sometimes called a "planned economy"?

   _____

3. What type of economic system is in place in the U.S.?

   _____

4. Why do individuals do the decision-making in a pure market system?

   _____

1.31 CATEGORIZATION

All together now. Below is a list of characteristics of economic systems. For each characteristic, write whether it is true of a "Market," "Command," or "Mixed" system. Some items will be true of more than one type of economic system. Be sure to list all that apply.

1. _____ a central authority makes all decisions
2. _____ the vulnerable have no protection
3. _____ resources are allocated at the determination of a central authority
4. _____ resources are allocated by a price system
5. _____ individuals are motivated by economic incentives
6. _____ competition drives the system
7. _____ all resources, goods, and services are privately owned
8. _____ an elected authority does the decision-making
9. _____ rivalry is expected between producers
10. _____ the system fails when the government fails
11. _____ some markets are "free" and some are regulated
12. _____ the market fails when one party becomes anti-competitive
13. _____ goods and services are voluntarily exchanged
14. _____ a master economic plan is fulfilled
15. _____ government does not intervene

1.32 CHARTING

Gridlocked. Use this exercise to create a study aid for the fundamental economic questions. Complete the table below by writing in whom or what is responsible for answering each of the basic economic questions in each type of economic system.

How are the fundamental economic questions answered?		FUNDAMENTAL QUESTIONS		
		What to produce?	**How to produce?**	**For whom to produce?**
ECONOMIC SYSTEMS	**MARKET**			
	COMMAND			
	MIXED MARKET			

Central Planning versus Market Mechanisms……..…….

When we look at real-world examples of economic systems, we can see the flaws in the theoretical models. A pure market system would be dangerous and harmful to firms and consumers alike. The most obvious flaws of a market system are these:

1. **No regulation to discourage firms from treating consumers or workers unfairly.** For example, a pure market economy would not prevent an employer from requiring laborers to work 70 hours in a week. Laborers, with no other way to make a living, might acquiesce.
2. **No automatic protection of an entrepreneur's rights to intellectual property.** A chemist who designs a life-saving drug could not prevent others from copying his product and selling it—meaning that all the hours he worked to design it would be unrewarded. Ultimately, of course, people might stop innovating altogether.
3. **Those who don't have a good or service to sell are unable to afford food and shelter.**
4. **Private firms do not create public goods.** For example, a private firm could not afford to provide free education to the public—nor would it have an incentive to do so, if it could just as easily provide it for a fee. Those who couldn't afford it would simply go uneducated.
5. **Some market transactions harm innocent third parties.** Even those who don't drive cars are forced to breathe polluted air.

A pure command system would have drawbacks, too. The most obvious disadvantages are these:

1. **Inefficiency.** Without having to compete for business, producers don't have an incentive to use resources wisely or to manage them cost-effectively.
2. **Someone has to administer the central plans.** A person who has the privilege of overseeing the system will likely have the authority to influence the design of the plan; those who aren't directly involved in the central planning are likely to receive fewer benefits than those who help administer it.
3. **Individuals are not free to make choices.** In a large economy, a person couldn't easily decide to work fewer hours in return for more free time and less pay. A central plan would not be able to accommodate the specific desires of every individual.
4. **Individuals receive less variety.** For example, the government has no incentive to produce a good in several varieties. A consumer in a market economy can choose from hundreds of varieties of toothpaste, but an individual in a command economy might just choose from "toothpaste" and "toothpaste with fluoride." This is what happened in the Chinese button market; as soon as the government loosened restrictions and allowed people to start their own enterprises in the late 1970s, entrepreneurs made a fortune selling a wide variety of buttons.

1.33 TRUE OR FALSE

To thine own self be true. Determine whether each statement below is true or false. For true statements, circle "T." For false statements, circle "F" and add any necessary corrections to make them true.

1. T F The pure market economic system is the least competitive market structure.
2. T F Consumers have more freedom in a market economy than in a planned economy.
3. T F The Food and Drug Administration is one example of how a central decision-making authority can administer a master economic plan.
4. T F In a pure market economy, national security would be provided by a firm.
5. T F In a pure command economy, national security would be provided by a central decision-making authority.

1.34 COMPARISON

Different strokes for different folks. In this exercise, you'll see groups of terms that describe economic systems. In each group, something has been included that does not belong. In each problem, cross out the term that does not belong and then write a brief explanation of your reasoning.

	The terms:	**Your explanation:**
1.	command system free market system pure capitalist system market system	
2.	profit motive price system central planning private property	
3.	public ownership of resources central planning price system central control of resources	
4.	regulated markets public ownership of resources private ownership of resources no rights to intellectual property	
5.	freedom of choice voluntary exchange regulated markets harshness	
6.	pure command pure planned pure market mixed market	

Snapshots of Modern Economic Systems……..

North Korea	
government:	Communist state
economic system:	• probably the most **centrally-planned** system in the world today • economically isolated and desperate • limited international trade • although there is substantial investment into nuclear arms technology, most of the people live in severe poverty, surviving on food received from international aid programs

China	
government:	Communist state
economic system:	• a **centrally-planned** system, which began pursuing **market-based** development in the late-1970s • resources are not collectivized, but left for local authorities to manage • small-scale enterprise is allowed • large annual foreign investment • since privatization, government industries have struggled to compete with private enterprise • now the second-largest economy in the world, although the income per capita is still very small • the fastest-growing economy in the world

Cuba	
government:	Communist state
economic system:	• a **command system**, with some private enterprise allowed • political command is reinforced with cultural isolation (private individuals cannot access the Internet without permission, but may freely access the state-sponsored "intranet") • economic command is reinforced with two kinds of currency with fixed values: one is used by private individual Cuban citizens, and the other is used by foreigners • about three-quarters of the labor force works in the state sector, one-fourth in the private sector

India	
government:	federal republic
economic system:	• a **mixed market system**, with strong **traditional** elements and substantial government presence • government-owned industries are slowly becoming privatized • high tariffs and trade restrictions support protectionism • highly-educated, English-speaking workforce is in high demand globally

1.35 IN BRIEF

Short and sweet. Write a brief response to each of the following questions.

1. What are the (hopefully) unintended consequences of the economic planning in North Korea?

_____

2. Which country has the most centrally-planned economy in the world?

   _____

3. How has the implementation of market mechanisms affected the Chinese economy?

   _____

4. How does the Cuban government maintain strong economic control over private enterprise in Cuba?

   _____

5. How does India deter foreign investment in its markets?

   _____

6. Which country has the most market-oriented economy in the world?

   _____

TEST-TAKING TIP	
	The curriculum calls for you to know the characteristics of pure command and pure market economic systems. It also asks you to understand the concept of a "mixed" system. I see a handful of test-worthy concepts in this part of the curriculum. First, economic systems can be described by their decision-making mechanisms. Be sure to know how each fundamental economic question is answered in each type of system. In a command system, it's always the decision-making authority. In a market system, it's either individuals or the market price system, so you can eliminate any other answer choice. Second, there are no pure systems, except in theory. This means that *every* real-world economy has some type of mixed economic system. Third, "capitalism" is synonymous with "market," "free market," and "free enterprise." If any two of those terms are answer choices (regardless of the question), neither one is likely to be the correct answer, because there are (in theory) never two correct answers. Finally, most texts strongly emphasize the difference between pure market systems and every other type of system. On the exam, you should expect a question in which you will have to identify the characteristics of pure market systems. Your best bet is first to look for characteristics of pure command systems.

1.36 EXAM PRACTICE

On the test. The questions below were taken from official practice exams. Follow the instructions that precede each question.

Question 1: First, cross out every answer choice that is not "individuals" or the "price system." Then, circle the letter of the correct answer choice.

1. In a pure market economic system, who makes decisions about what to produce?

   a. government
   b. tradition
   c. households
   d. churches
   e. individuals

Question 2: First, underline the answer choice that is characteristic of a command system. Then, circle the letter of the correct answer choice.

2. Which of the following is NOT a characteristic of pure capitalism or pure market systems?

   a. the price system
   b. central planning
   c. unregulated markets
   d. private property
   e. competition

Incentives……

We all have different reasons for doing the things we do. Some of us work because we look forward to payday. Some of us don't work because we value spending time with our families. Some of us work because we would be bored otherwise. To an economist, although our reasons may differ, our behaviors are very similar and predictable. Economists don't think we're all selfish, but they expect us to look out for our own interests.

Incentives, Rewards, and Penalties

An **incentive** is something that will motivate a person to do something. Incentives can be **positive**, like when someone offers you cash to do something, or **negative**, like when someone tells you your life is at stake if you don't do it. To use economics jargon, a positive incentive is one that offers a positive amount of utility. A negative incentive offers a negative amount of utility. Some incentives are **monetary** and some are **non-monetary**. Both monetary and non-monetary incentives can be either positive or negative.

In modern economic analysis, we expect people to act out of **rational self-interest**. With this assumption in mind, we can expect that **people will respond predictably to incentives**. If a man is offered an incentive that will increase his income, we can reasonably expect him to take it. If he is offered an incentive that threatens his life, he'll probably avoid it.

We can never know exactly how a person will respond to an incentive because people have different **values** that influence their decision-making. We might expect a man to want to increase his income, but we can't be certain of what he'll be willing to do for that increase. Perhaps the man is buried in bills and he'll do just about anything to earn a few extra bucks. But perhaps he values the time he spends with his children, and he won't increase his income if he has to do it at the expense of his time at home.

1.37 CATEGORIZATION

What's in it for me? Each action below was motivated by some type of incentive. Determine which type and circle your response.

1.	Joe "kicked the habit" in response to an increase in the taxes on tobacco. Joe's incentive to quit was:	positive	negative
2.	When Walt's only car was stolen, his good friend Ned gave him his old beater. Originally, Ned had planned to sell it. He could have used the extra cash. Ned's incentive to sacrifice his car was:	monetary	non-monetary
3.	On the condition that she maintain a 3.5 GPA in high school, Celia's parents promised to pay for her college education. Celia earned a 3.52. Her incentive to keep her grades up was:	positive	negative

4.	For the past two years, Earl has been battling with a life-threatening illness. He has just gone into a high-risk surgery. If successful, the procedure could cause his disease to go into remission. On the other hand, there is a strong likelihood that Earl will not survive the procedure. His incentive to undergo a risky procedure is:	positive	negative
5.	A tariff was recently imposed on champagne imports. For the most part, the only bottles available for less than $40 apiece are American sparkling white wines. Roxanne is planning a New Year's Eve party, and she's just realized she can only afford to serve her guests "the cheap stuff." Her incentive to buy domestic bottles is:	monetary	non-monetary
6.	Easton is a mail carrier. Around the post office where he works, he is notorious for taking too long to complete his route. But he takes pride in what he does. When an envelope reads "Photos Enclosed," Easton will leave the envelope at the recipient's doorstep, rather than risk bending the photos by stuffing them into a mailbox. Easton's incentive to carry the mail with care is:	positive	negative

1.38 IN BRIEF

Choose your words carefully. Write a brief response to each of the following questions.

1. What is an incentive?

   _____

2. What is a positive incentive?

   _____

3. What is a negative incentive?

   _____

4. In one word, describe how people respond to incentives:

   _____

5. Why can't we predict exactly how a person will respond to an incentive?

   _____

6. In modern economics, do we assume people are selfish or self-interested? What is the difference?

   _____

   _____

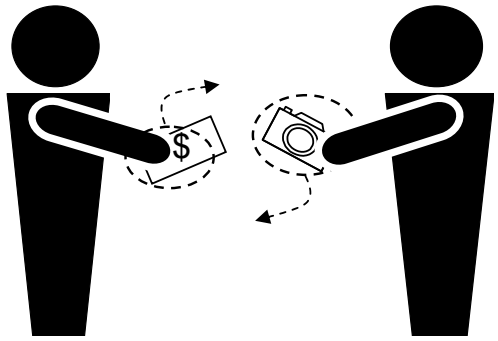
Voluntary Exchange……...……..

Nearly everything we study in economics has something to do with exchange. Economists try to explain why some exchanges are made and others aren't, or why some people are willing to exchange something for a particular good, but others aren't willing to make the same trade. The study of economics is particularly concerned with the principles of exchange because without exchange, we'd have no economic systems.

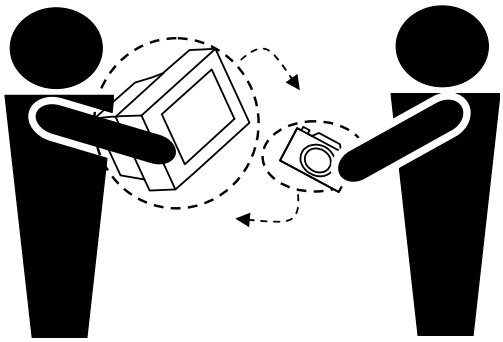
Exchange

When we make an **exchange**, we simply trade one thing for another. We can exchange a resource, good or service for money, or we can exchange it for another resource, good or service.

Exchange



Money may be given in exchange for goods or services.



Goods or services may be given in exchange for other goods or services.

Sometimes we have to make exchanges against our will. For example, we don't all look forward to paying taxes, but most of us pay them anyway. In return, we are given national security and certain conveniences like breathable air and public sewage systems. Other times, we make exchanges voluntarily. **A voluntary exchange occurs when both parties expect to somehow gain from the exchange.** When we buy a new house, we expect to gain shelter and the social status that is associated with owning a home. More important, we hope the house will appreciate in value so we can sell it later and make a profit. Also, the seller expects to gain cash from the sale of the house. If he has any talent for real estate, he probably expects to sell the house for more than what he paid for it. In a market economy, resources, goods, and services are exchanged voluntarily. In a command or planned economy, exchanges may be forced.

Barter

When we **barter**, we exchange resources, goods, or services for other resources, goods or services. No money is involved. Normally, we have no trouble making one exchange without money, but we would have a terrible time trying to run a whole economy without money. The system would be inefficient, because barter is only possible when there is a **double coincidence of wants**.

Let's consider an example. Suppose I live in a barter economy. I have to trade the things I produce for everything I need. This means I have to trade economics workbooks for food, clothing, shelter, internet connectivity, shoes, a cell phone, and a whole list of other things. Now suppose I find some folks who can provide cell phone service but they are not interested in my economics workbooks[2]. Suppose they only want candy bars. I head down my street and start knocking on doors, looking for someone who has candy bars. When I find a guy who has candy bars, I offer him an economics workbook. He turns me down, because all he wants are cows. I continue down the street, knocking on doors. When I find a lady with a cow, she turns me down because she only wants a nuclear missile. I'm in a tough spot, because now I have to approach my neighbors and ask them if they know where I can find a nuclear missile.[3] I head down the street, bothering more neighbors. Finally, I find a guy who makes nuclear missiles and, as it happens, he wants an economics workbook (to study how best to profit on the nuclear missiles.) Good for him. When we trade, I get a missile and he gets a workbook. I take the missile to the lady with the cow and we trade, no questions asked. I take the cow to the candy bar guy and we trade. I take the candy bars back to the cell phone people and finally, I get a cell phone. Unfortunately, I will have to start the process all over again in order to get everything else on my list.

[2] Their loss. No stick figure drawings for them. – Jessica

[3] And these days, you can get into a lot of trouble doing that. – Lawrence

If you can imagine a whole economy full of people trying to meet their needs through barter, you can probably understand why barter is inefficient. Even the most primitive economies have found ways to avoid barter. **Money** eliminates the need for barter by functioning as a **medium of exchange**. In the example above, I could have sold my workbook to DemiDec for money. Then I could have approached the cell phone company and offered them money, and they could have given me a phone. With money, there would have been no need to deal with the nuclear missile guy or the cow lady. A medium of exchange just makes everything easier. We'll discuss money again later in the workbook, but for now, focus on how money makes life easier by alleviating the inefficiency of a barter system.

Markets

A **market** is a mechanism that brings buyers and sellers together to make exchanges. Some markets are physical places, such as grocery stores and used car lots in Tbilisi, Georgia[4]. Buyers and sellers physically gather together in these places. Some markets are on-line, like eBay and iTunes. Newspaper and radio ads are market mechanisms, too.

In the example above, markets would have made my life easier even in a barter economy. Rather than going door-to-door, I could have simply gone online and found a cell phone company that wanted my workbook. In the original **swap meets**, this is probably exactly what happened.

1.39 MATCHING

Love Connection. Match the letter of each term in the column on the left to the best available description in the column on the right. You will need to use each term only once. The first has been completed for you.

a. Market
b. voluntary
c. barter
d. nuclear missile
e. money
f. double coincidence of wants
g. medium of exchange
h. gain

1. ___d___ what you can get for an economics workbook in a hypothetical barter economy
2. _____ an example of a medium of exchange
3. _____ to trade resources, goods, or services for other resources goods or services
4. _____ a mechanism that brings buyers and sellers together to make exchanges
5. _____ what both parties expect to do when they make a voluntary exchange
6. _____ the function of money that makes it easier to use than a barter system
7. _____ what is necessary for barter
8. _____ the type of exchange that usually happens in market economies

1.40 IN BRIEF

Brevity stole Christmas. Write a brief response to each of the following questions.

1. What condition must be met in order for a voluntary exchange to occur?

   _____

2. How do most economic systems avoid barter?

   _____

3. How do markets make economic systems more efficient?

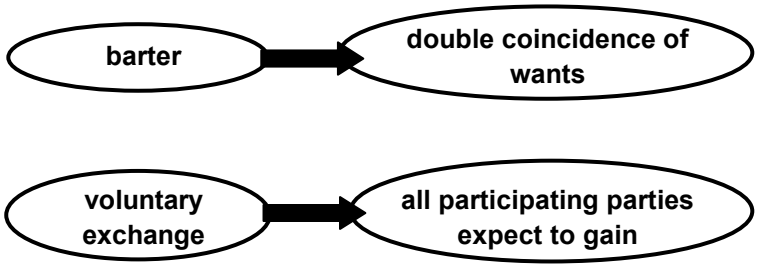
   _____

[4] My friend and I considering buying a car here, before securing the services of a cab driver instead. We ended up sleeping at his house and feasting on preserved cherries. – Daniel

TEST-TAKING TIP

Be careful not to confuse the terms "barter" and "voluntary exchange." Barter is only one form of voluntary exchange.

On the exam, you should expect to be asked about what conditions must be met in order for either barter or voluntary exchange to take place—and you should know that the conditions are not the same for both. Barter requires a double coincidence of wants. Voluntary exchange requires that all participating parties expect to gain. In your mind, you should link each term with its respective condition:



If you see "barter" in a question stem, "double coincidence of wants" might be part of the correct answer choice. If you see "voluntary exchange" in the question stem, "expect to gain" might be in the correct answer choice.

1.41 EXAM PRACTICE

On the test. The question below is similar to one you might see on exam day. First, cross out the answer choice that contains the condition for barter. Next, underline the two things you should know to link together. Finally, circle the letter of the correct answer choice.

1. Which of the following conditions must exist for voluntary exchange to take place?

    a. All anticipated costs must exceed all anticipated benefits.
    b. All participating parties must expect to gain.
    c. The time and place of the exchange must be clear.
    d. A double coincidence of wants must exist.
    e. The real costs must be known by both parties.

Specialization……

We make exchanges because we don't all produce everything we need. Some of us can fix cars, some of us can write footnotes. Rather than learn to fix cars *and* write footnotes, we can exchange resources, goods, and services, and leave ourselves with time for leisure (for driving cars and experiencing potential footnotes.)

Specialization and Interdependence

Specialization is the act of focusing on completing a particular task or producing a particular good or service. The **specialization of labor** can make an economy more efficient, because an individual who specializes in the production of a single good or service can make exchanges to get all the other goods or services he needs.

The **division of labor** is the act of separating the production process into isolated tasks. It's an extreme form of specialization. It occurs in an assembly line, where workers are assigned to an isolated task, which they perform repeatedly throughout the workday. The division of labor can improve the productivity of a labor force if each individual is well-trained and the isolated tasks are well-coordinated. On the other hand, the division of labor can be counter-productive, too. If one employee fails to do his assigned task properly or completely, his failure can stall the production process or result in a significant loss of quality in the whole product. Companies often hire consultants to come up with ways to avoid this happening.

Specialization makes us all **interdependent**. Interdependence can be risky because those who choose to produce just one good or service are reliant on others to produce everything else they need for survival. The advantage of specialization is that it enables us to maximize our use of scarce resources. None of us needs to own every resource if we're all willing to exchange what we can produce with the resources we have.

1.42 KEY TERMS

Term-inator. Define each of the following terms.

1. **specialization:**

   _____

   _____

   _____

2. **division of labor:**

   _____

   _____

   _____

1.43 IN BRIEF

Man of few words. Write a brief response to each question below.

1. How can the specialization of labor make an economic system more efficient?

   _____

   _____

2. What is the most extreme form of specialization?

   _____

3. What is the major advantage of specialization?

   _____

4. What is the major drawback of specialization?

   _____

II. Microeconomics

This section covers everything in Section II of the curriculum outline except for some topics related to money, which are found in the macroeconomics section.

Markets……..…….

In microeconomics, we study the behavior of individual markets and individual consumers. We also examine the factors that affect those behaviors.

Markets and Prices

A **market** is a mechanism that brings buyers and sellers together. Whether on-line, in a supermarket, or on the phone, a market exists wherever buyers and sellers interact.

In order to make an exchange, a buyer and a seller must agree on a **price**. In some economic systems, prices are fixed by a governing authority. In a market economy, prices are determined in markets. In fact, **in a market economy, goods and services are allocated by market prices**. Those who cannot afford to pay market prices will not receive goods and services. If a buyer is unwilling to pay a seller's price, an exchange will not take place. If a seller is unwilling to accept what a buyer is willing to pay, an exchange will not take place. Only when the buyer and seller agree—that is, only after they have set a price—will they make an exchange.

2.01 IN BRIEF

Brevity is the soul of wit. Write a brief response to each question below.

Ex. Where is Daniel editing this workbook ?

Taking a bus through the Andes from Mendoza to Santiago[5]

1. How can prices allocate goods and services?

   _____

   _____

2. How can you tell when a market exists?

   _____

   _____

[5] Shortly after I wrote this, there was an incident involving the onboard toilet and a spray can. – Daniel

Demand……

To understand how a buyer and seller can agree about an exchange price, we have to examine the exchange from both viewpoints. In economics jargon, a buyer will "demand" a good and a seller will "supply" it. We'll begin with a discussion of demand.

Demand

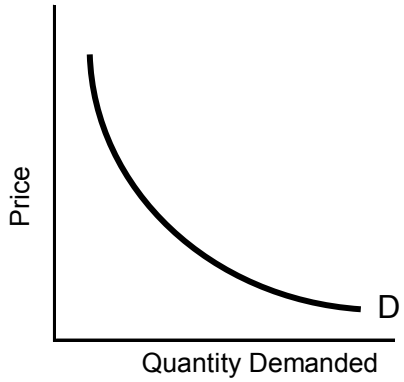
A demand schedule shows what quantity of a particular good or service consumers are willing and able to buy at each price within a range of prices. According to the **law of demand**, as the price per unit increases, consumers will demand less of a good or service.

If we plot the data from a demand schedule, we create a demand curve. The curve is downward-sloping because of the inverse relationship between price and quantity demanded. Quantity demanded is the quantity of a good or service that consumers are willing and able to buy at one given price. It applies to any one given point on the demand curve. At a high given price, quantity demanded is low, and vice versa.

Demand Schedule

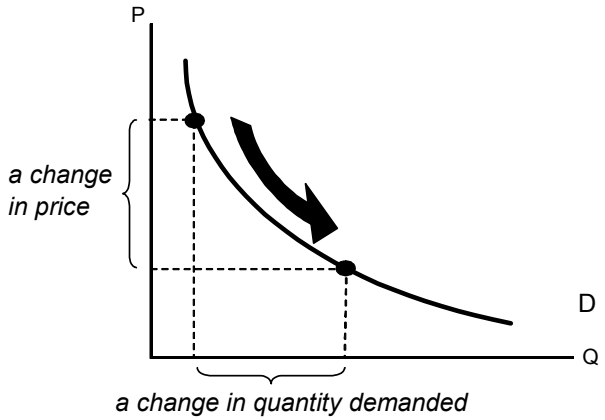
Price Per Unit	Quantity Demanded
$2,500	0
$2,000	1000
$1,500	2000
$1,000	3000
$500	4000
$0	5000

Demand



On the graph, a change from one price to another is seen as a movement along the demand curve.

Movement along the Demand Curve



2.02 FILL-IN

The filling is the best part. Use the terms in the Word Bank to fill in the blanks in each statement below.

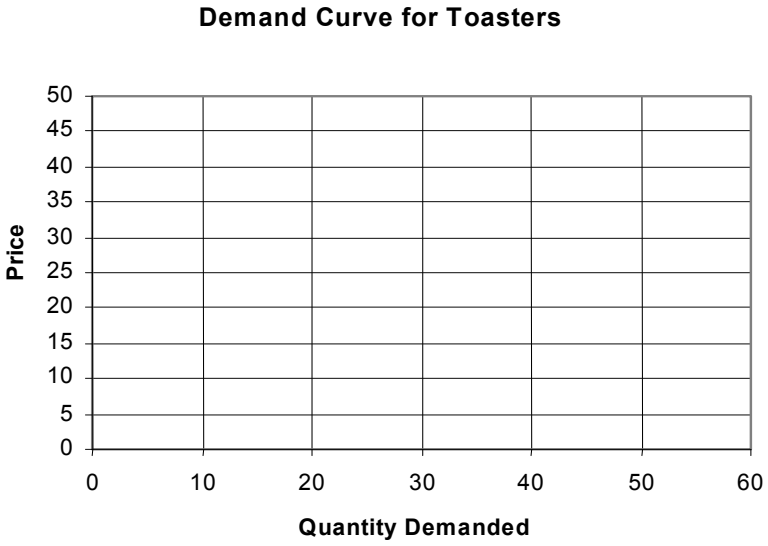
WORD BANK		
price curve	decreases law of demand	point on the curve increases

1. The _____ holds that as price increases, quantity demanded _____.
2. As price decreases, quantity demanded _____.
3. Demand is a schedule, which can be represented graphically by a downward-sloping _____. Quantity demanded corresponds to a _____.

2.03 APPLYING KEY CONCEPTS

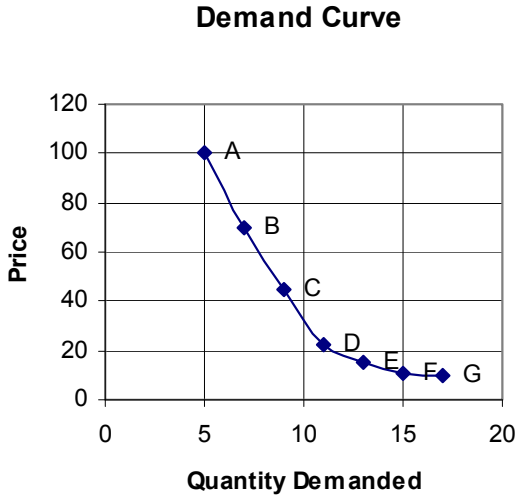
Connect the dots. Plot the price and quantity demanded data from the table into the grid, below. When you've finished, connect the dots to form a demand curve.

Price	Quantity Demanded
$15	50
$20	30
$25	18
$30	10
$35	7
$40	6
$45	5



2.04 FILL IN

Details, details. The difference between "demand" and "quantity demanded" is important, and the Decathlon likes to test you on your understanding of it. In this exercise, you'll practice using the terms correctly. Use the demand curve below to complete the statements that follow.



1. The figure above is a sample _____ curve.
2. Begin at point A on the demand curve. By moving to point B, price drops from 100 to 70 and _____ _____ increases from five to seven.
3. A move from point E to point D represents a price increase. It also represents a decrease in _____ _____.
4. When considered all together, points A, B, C, D, E, F, and G, as well as all theoretical points in between, represent _____.
5. Moving leftward from any given point results in an increase in price and a decrease in _____ _____.
6. Moving rightward from any given point results in a decrease in price and an increase in _____ _____.
7. According to the law of _____, price is inversely related to _____ _____.

Supply……

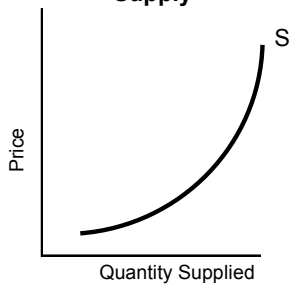
To supply a good or service, a seller must produce it and make it available for sale. A supply schedule shows what quantity of a particular good or service sellers are willing and able to produce and sell at each price within a range of prices. According to the **law of supply**, as the price per unit increases, sellers will supply more of a good or service.

If we plot the data from a supply schedule, we create a supply curve. The curve is upward-sloping because of the positive relationship between price and quantity supplied. Quantity supplied is the quantity of a good or service that sellers are willing and able to produce and sell at one given price. It applies to any one given point on the supply curve. At a high given price, quantity supplied is high; at a low price, quantity supplied is low.

Supply Schedule

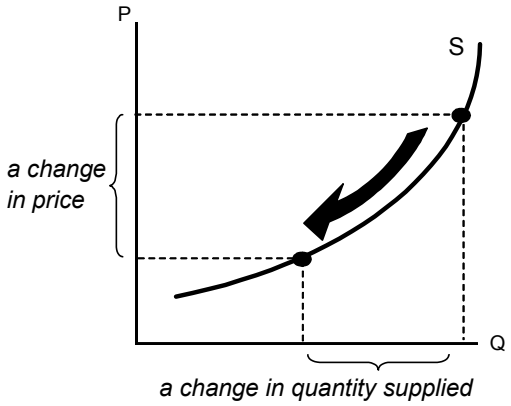
Price Per Unit	Quantity Supplied
$2,500	5000
$2,000	4000
$1,500	3000
$1,000	2000
$500	1000
$0	0

Supply



On the graph, a change from one price to another is a movement along the supply curve.

Movement along the Supply Curve



2.05 SENTENCE COMPLETION

Decisions, decisions. Circle the word or phrase that best completes each statement.

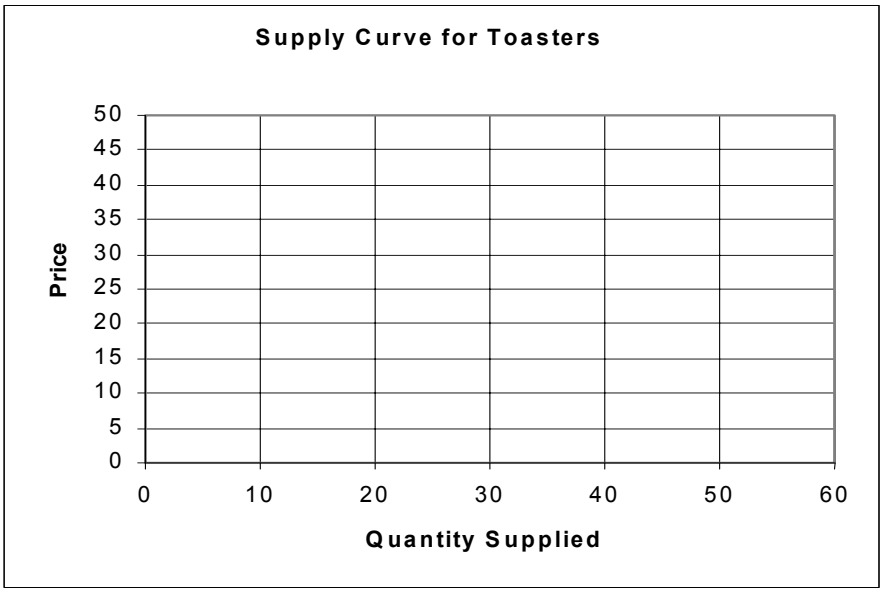
Ex. The best part of writing a DemiDec workbook is (EDITING THE ANSWER KEY, DRAWING STICK FIGURES).

1. The law of (SUPPLY, DEMAND) holds that quantity supplied is (POSITIVELY, INVERSELY) related to price.
2. As price (RISES, FALLS), quantity supplied will decrease.
3. Supply is graphically represented as a (CURVE, POINT ON A CURVE). Quantity supplied is graphically represented as a (CURVE, POINT ON A CURVE).
4. A normal supply curve slopes upward and to the (LEFT, RIGHT). It has a (POSITIVE, NEGATIVE) slope.

2.06 APPLYING KEY CONCEPTS

Connect the dots. Plot the data from the table into the grid, below. When you've finished, connect the dots to form a supply curve.

Price	Quantity Supplied
$15	5
$20	6
$25	7
$30	10
$35	18
$40	30
$45	50

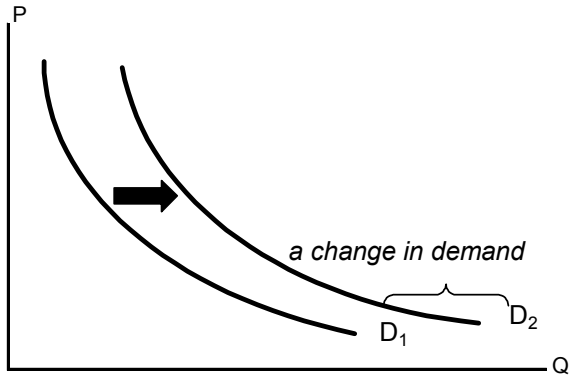


Changes in Demand……..…….……..

Supply and demand do not exist in a vacuum. Some markets are fickle. One of the challenges of economic analysis is to predict how an event will affect a market. To do so, we have to separate supply and demand, and analyze the effects of a chance on each of them.

A demand curve represents the quantity demanded of a given product at each price within a range of prices. **When there is a change in demand, the entire demand curve shifts to the right or left.** Be sure not to confuse a shift in the demand curve with a change in quantity demanded (a movement along the curve).

Movement of the Demand Curve



A change in demand—or a shift in the curve—can result from any of a handful of factors. These are the most important factors:

1. **A change in consumer income.** When consumers make more money, they have more money to spend. For **normal goods**, an increase in consumer income will result in an increase in demand. For **inferior goods**, an increase in consumer income will actually result in a decrease in demand. This is known as the **income effect**.

Many salaried employees are given **Cost of Living Adjustments**, which automatically raise their salaries in order to keep up with inflation. That type of pay increase won't affect demand. But when consumer income rises faster than inflation, we can observe a change in demand.

2. **A change in the price of a substitute or complementary good.** If a price change convinces consumers to buy a **substitute**, demand decreases. If a price change gets consumers buying more of a **complementary good**, demand increases.
3. **A change in consumer tastes**. What consumers like and don't like influences what they buy. If one good or service becomes more "in style," demand for it will increase.
4. **A change in the number of demanders**. If the number of demanders changes, the number of people who can (and will) consumer a given item will also change.
5. **A change in expectations**. If consumers expect any of the above changes to occur, they will adjust their purchasing patterns accordingly. If consumers expect higher income in the future, for example, they'll spend more now in anticipation of having more money. If they expect lower prices in the future, they'll demand less now, postponing their purchases (and actually decreasing prices through their diminished demand, in an economic example of a self-fulfilling prophecy.)

These factors explain the shape of the demand curve for a normal good. We can summarize the **income effect** as follows: As a good becomes less expensive, more people are willing to buy it because more people can *afford* to buy it. And we can explain the **substitution effect** like this: As a good becomes more expensive, more people will buy a *substitute* good instead.

2.07 CATEGORIZATION

One of these things is not like the other... In this exercise, you'll see groups of phrases or concepts that are somehow related. In each group, one item has been included that does not belong. In each problem, cross out the one that does not belong and then write a brief explanation of your reasoning.

	The candidates:	Your explanation:
Ex:	• *Ross Otto* • *Chris Yetman* • ~~*Dean Schaffer*~~ • *Daniel Berdichevsky*	*The group consists of individuals who dealt with the "water boiler" situation at the 2008 World Scholar's Cup in Seoul.*
1.	• price drops • consumers make more money • consumers convince their friends to consume • consumers decide not to consume any more	
2.	• the price of a substitute good increases • the price of a complementary good increases • the number of consumers increases • consumer income increases	
3.	• change in consumer preference • change in price • change in season • change in the number of consumers	

4.	• change in the price of a substitute • change in the price of a complement • change in price • change in consumer income	

Substitutes and Complementary Goods…….……

A **substitute good** is one that can easily replace another good. Some goods are sold as substitutes, such as "egg substitute," but others are less obvious, like tea in place of coffee, or cruises instead of packaged land vacations. When the price of a good increases, *ceteris paribus*, the demand for its substitute good also increases. In other words, **the price of a good and the demand for a substitute good are positively related**.

A **complementary good** is one so closely related to another that when the consumption of either good changes, the other is affected in a similar way. Examples of complementary goods abound, like movie tickets and popcorn or DVD players and DVDs. **When the price of a good increases, the demand for a complementary good decreases.**

2.08 CATEGORIZATION

Get to the point. In this exercise, you'll see what happens to the price of one good. Your job is demonstrate what happens to a related good by adding an arrow that points in the appropriate direction.

	IF	GOES	THEN	GOES
Ex:	The number of days left before this workbook is due:	↓	The number of footnotes I write:	↓

	IF	GOES	THEN	GOES
1.	Price of Sprint	↑	Demand for Verizon Wireless	
2.	Price of Dell Notebooks	↓	Demand for Compaq Notebooks	
3.	Price of Movie Tickets	↓	Demand for Popcorn	
4.	Price of Peanut Butter	↑	Demand for Jelly	

2.09 IN BRIEF

Short Answer. Write a brief response to each prompt, below.

1. In your own words, write a definition of "demand."

   _____

   _____

2. In your own words, write a definition of "quantity demanded."

   _____

   _____

3. Name the two factors that explain the shape of the demand curve for a normal good.

   _____

   _____

4. Explain the relationship between the price of a good and the demand for its substitute.

   _____

   _____

5. Explain the relationship between the price of a good and the demand for its complement.

   _____

   _____

2.10 APPLYING KEY CONCEPTS

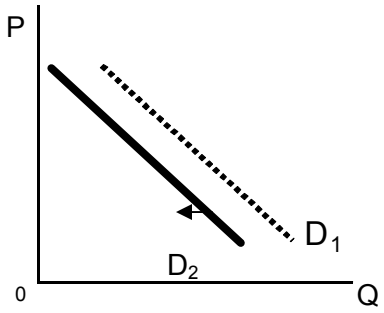
Mean curves. In each problem below, there is an explanation of something that has happened to one of the non-price factors that affects demand. The original demand curve, labeled "D_1," has been drawn for you. Draw a new demand curve that reflects the change in demand. Label the new curve "D_2."

Change:

Ex.: Yet another popular new diet has everyone afraid to eat carbs. Indicate what will happen to the demand curve for bread, which are carb-rich.

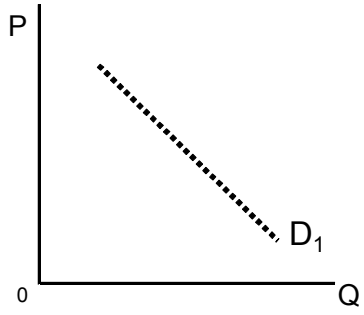
Your Response:

Demand for Bread



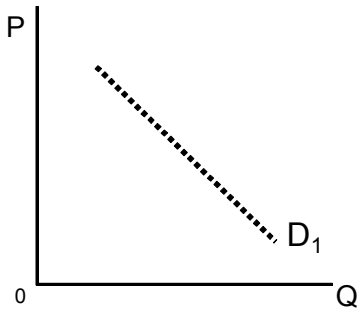
1. The price of hotdog buns increases sharply. Indicate what will happen to the demand for DECADOGS, a nationally-recognized brand of hotdog.

Demand for DECADOGS



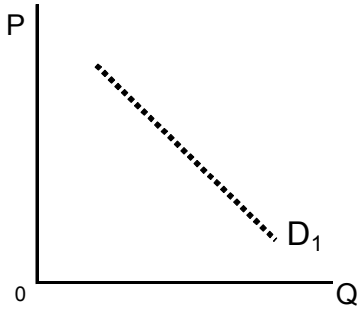
2. The price of iced tea decreases. Indicate what will happen to the demand for lemonade.

Demand for Lemonade



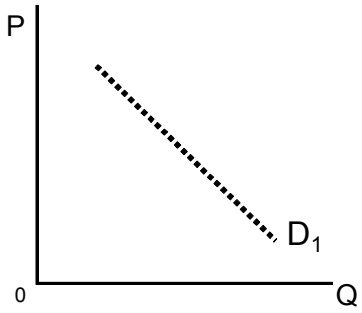
3. In April, the last of the snow at the local ski resort has melted. Indicate what has happened to the demand for snowboards.

Demand for Snowboards



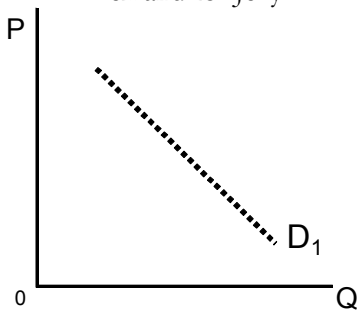
4. A new president is elected, and his first order of business is to give an immediate tax break to anyone who earns $250,000 per year or more. Indicate what will happen to the demand for Porsches when the tax break goes through.

Demand for Porsches



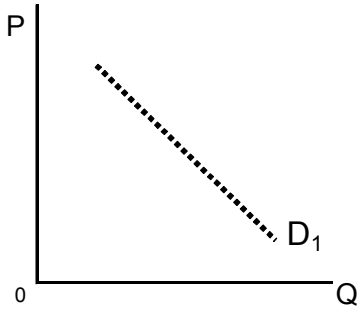
5. The price of peanut butter decreases. Indicate what will happen to the demand for jelly.

Demand for Jelly



6. Student loan checks are disbursed and college students suddenly have more "income." Indicate what will happen to the demand for macaroni-n'-cheese dinners.

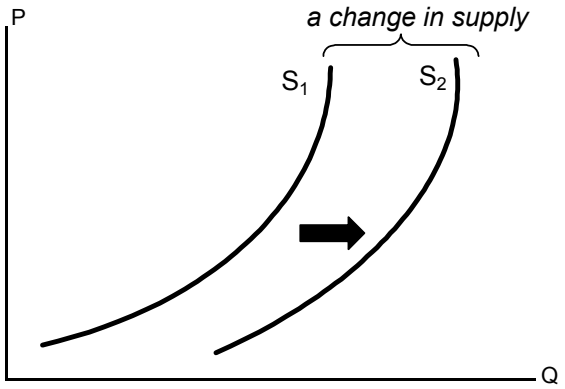
Demand for Macaroni-n'-Cheese



Changes in Supply and Demand – Continued…….

A supply curve represents the quantity supplied of a given product at each price within a range of prices. **When there is an increase or decrease in supply, the entire supply curve shifts to the right or left, respectively.**

Movement of the Supply Curve



A change in supply can result from any of a handful of factors. These factors are the most important:

1. **A change in the price of resources.** Supply is mainly driven by **profit**. To a supplier, profit is an incentive to offer a higher volume of a good or service. Profit has two parts: the **factor costs** of a good and the selling **price** of the good. Factor costs are simply the costs of the factors of production. If factor costs increase, profit decreases, so supply decreases. The supply curve shifts to the left. Keep in mind, **a change in technology** may reduce the cost of production. When an improvement in technology results in a more efficient production process, producers are able to produce goods and services at lower costs. At each price, producers are more willing and able to supply the good, so again, the supply curve shifts to the right.
2. **A change in the number of suppliers.** As more suppliers enter the market, more are willing and able to produce a good or service and make it available for sale. An increase in the number of suppliers will cause the supply curve to shift to the right.
3. **A change in producers' expectations.** If producers expect costs to be lower in the future, they'll produce less now so they can produce more later.

2.11 IN BRIEF

Short answer. Briefly respond to each of the following:

1. In your own words, write a definition of "supply."

   _____

   _____

2. In your own words, write a definition of "quantity supplied."

   _____

   _____

3. In one word, describe how price is related to quantity supplied.

   _____

2.12 CATEGORIZATION

It's not polite to point. In this exercise, you'll see what happens to a factor that affects supply. Your task is to demonstrate how supply is affected by drawing an arrow that points in the appropriate direction. An upward arrow indicates an increase, and a downward arrow indicates a decrease (in other words, you're showing what happens to supply, not the supply curve).

	IF	GOES	THEN	GOES
Ex:	The overdraft fee on my checking account		The likelihood I'll keep my checkbook balanced	
1.	Quality of production technology		Supply	
2.	Labor costs		Supply	
3.	Vehicle maintenance costs		Supply	
4.	Price of raw goods		Supply	
5.	Expected future exchange price of a good		Supply today	
6.	Number of suppliers		Supply	
7.	Price of oranges		Supply of orange juice	
8.	Price of peanuts		Supply of peanut butter	
9.	Number of cell phone manufacturers		Supply of cell phones	
10.	Expected price of crude oil next month		Supply of crude oil today	

2.13 APPLYING KEY CONCEPTS

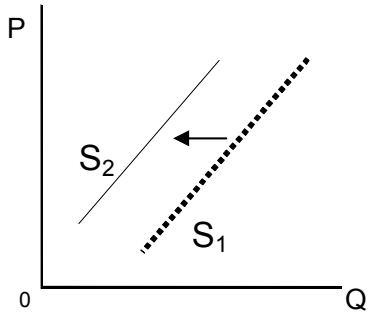
Learning curve. In each problem below, there is an explanation of something that has happened to one of the non-price factors that affects supply. The original supply curve, labeled "S_1," has been drawn for you. Draw a new supply curve that reflects the change in supply. Label the new curve "S_2."

Change:

Ex.: The price of low-grade meat increases. Indicate what will happen to the supply of DECADOGS, a nationally-recognized brand of hotdog.

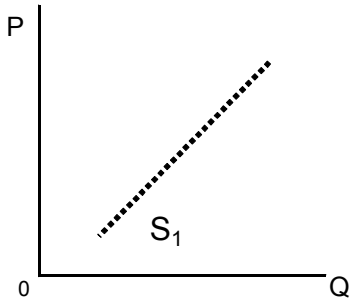
Your Response:

Supply of DECADOGS



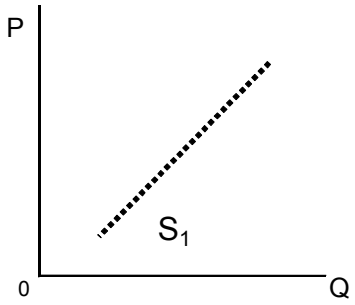
1. A major international accounting firm gets bad publicity for a rash of accounting scandals. The firm lays off over 40 percent of its accountants. Desperate to find a job, the accountants all lower their salary requirements. Indicate what happens to the world supply of services from accounting firms.

Supply of Accounting Services



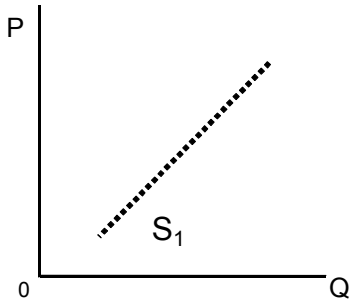
2. U.S. gasoline producers hear that automakers expect to sell twice as many gas-guzzling SUVs in the next quarter as they did in the previous quarter. When SUV sales increase, gasoline producers plan to raise the price of a gallon of gasoline. Indicate what happens to the present supply of gasoline.

Supply of Gasoline



3. The world's best economics professors are gathered for a cocktail party in the headquarters building of *The Economist*. Sometime during the party, a bomb goes off, killing the professors and everyone else inside the building. Indicate what happens to the world supply of economics lectures.

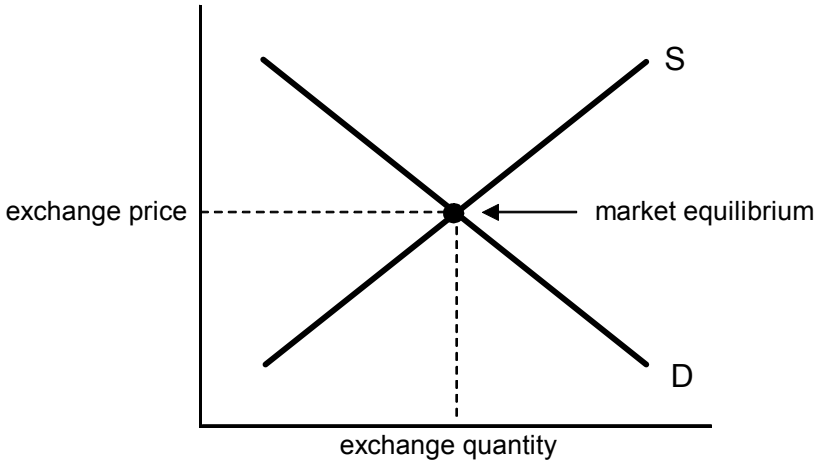
Supply of Economics Lectures



Market Equilibrium……

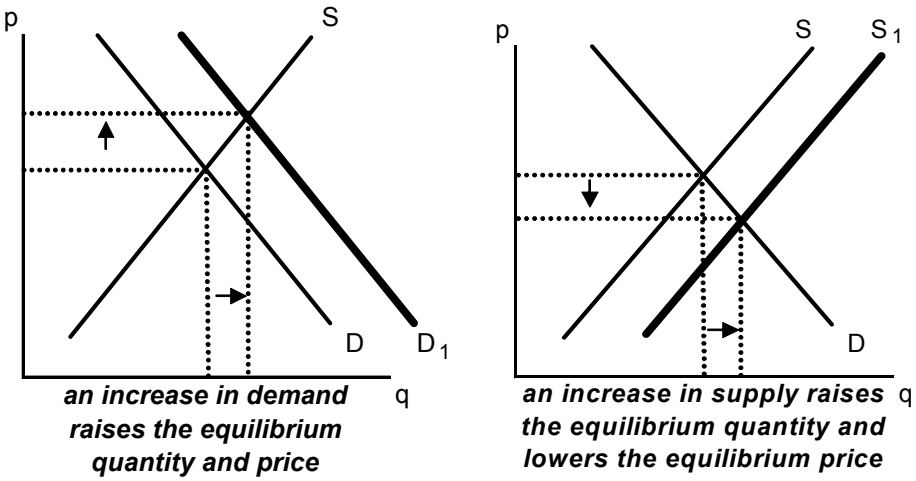
Market equilibrium is the point at which the demand curve intersects the supply curve. It is also known as the **market-clearing price** because it represents the point at which the market **"clears"**—where suppliers sell all they planned to sell and buyers buy all they planned to buy at a given price.

Market Equilibrium



Equilibrium has two components: an **exchange quantity** and an **exchange price.** Equilibrium will change when either supply or demand, or both, changes.

Changes in Equilibrium



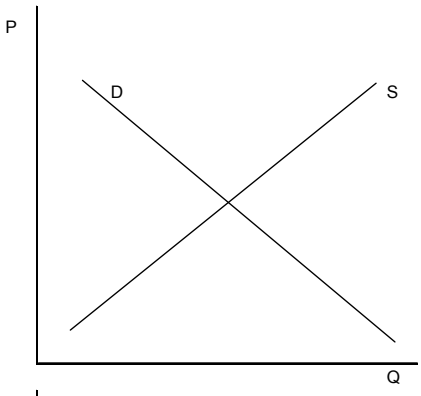
An increase in supply will lower the exchange price and increase the exchange quantity. An increase in demand will raise the exchange price and raise the exchange quantity.

If both curves shift simultaneously, the outcome is less obvious. The net result varies according to how much movement occurs in each curve. Either price or quantity (but not both) will be indeterminate. The change in the other will be known. To find which is indeterminate, try graphing the change in each curve separately and seeing what happens to price and quantity. One will vary in the same direction both times; the other will move in different directions. The latter is indeterminate.

2.14 APPLYING KEY CONCEPTS

Mean curves. No economics workbook would be complete without an exercise in moving the supply and demand curves. For each question set, I'll give you "starting curves," for supply and demand. Draw new curves to illustrate how supply or demand is affected. Use your drawings to answer the questions that follow.

1. *Suppose demand increases. Draw a new demand curve to reflect this change.*



Does market equilibrium change?

_____

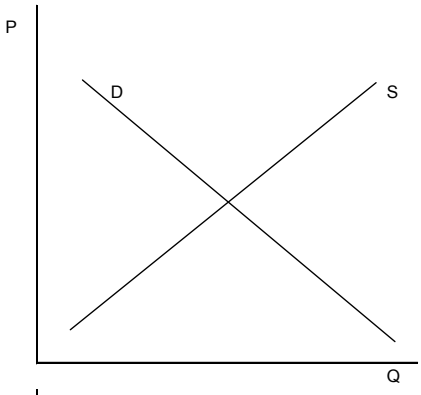
What happens to the exchange quantity?

_____

What happens to the exchange price?

_____

2. *Suppose the number of suppliers in the market doubles. Draw a new supply curve to reflect this change.*



Does market equilibrium change?

_____

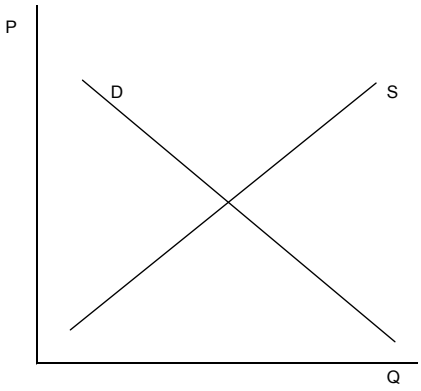
What happens to the exchange quantity?

_____

What happens to the exchange price?

_____

3. *Suppose demand decreases and supply increases. Draw new curves to reflect these changes.*



Does market equilibrium change?

_____

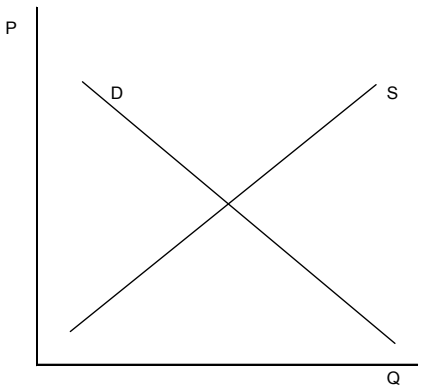
What happens to the exchange quantity?

_____

What happens to the exchange price?

_____

4. *Suppose supply decreases but demand increases. Draw new curves to reflect these changes.*



Does market equilibrium change?

_____

What happens to the exchange quantity?

_____

What happens to the exchange price?

_____

2.15 CATEGORIZATION

Everything is on the table. Below is a table of how changes in supply or demand will affect market equilibrium. For each scenario in the table, indicate whether the resulting exchange price and exchange quantity will increase or decrease, or whether the exact outcome cannot be exactly predicted. Use an appropriate arrow to indicate an increase or decrease, or a question mark to indicate that the outcome cannot be exactly predicted. *Two scenarios have been completed for you.*

Changes in Market Equilibrium	No Change in Supply	Increase in Supply	Decrease in Supply
No Change in Demand	**P:** **Q:**	**P: ↓** **Q: ↑**	**P:** **Q:**
Increase in Demand	**P:** **Q:**	**P:** **Q:**	**P:** **Q:**
Decrease in Demand	**P:** **Q:**	**P:** **Q:**	**P: ?** **Q:↓**

Surplus and Shortage……..

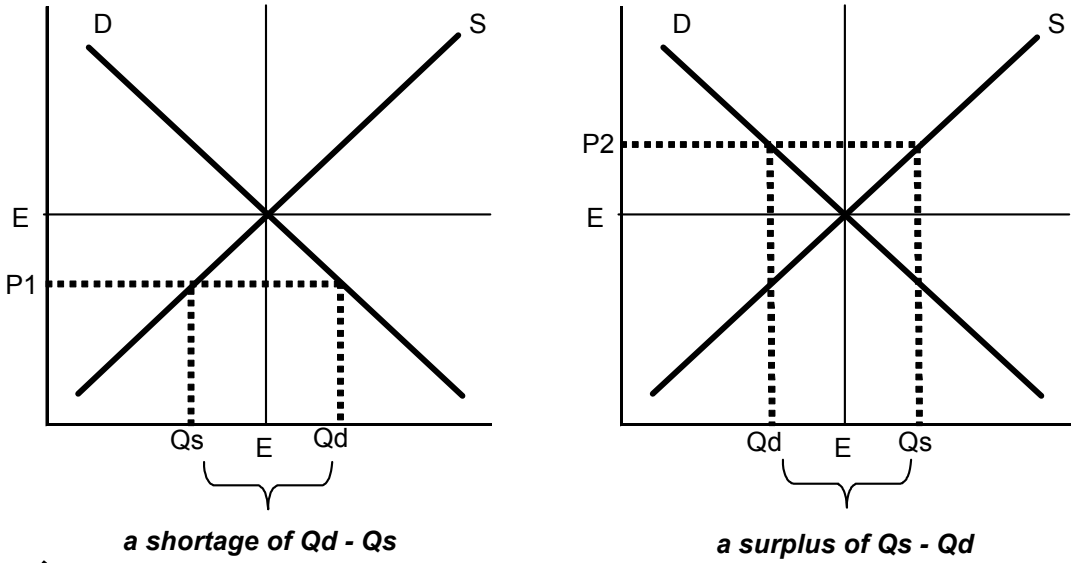
If the price of a good falls below the equilibrium price, then quantity demanded will exceed quantity supplied. This result is a **shortage**. The amount of the shortage is equal to the difference between quantity demanded and quantity supplied. Market pressure will drive the price up to the market-clearing price.

If the exchange price rises above the equilibrium price of a good, quantity supplied will exceed quantity demanded, resulting in a **surplus**. The amount of the surplus is equal to the difference between quantity demanded and quantity supplied. In this case, market pressure will drive the price down to equilibrium.

The amount of a surplus or a shortage is always stated in terms of quantity, never in terms of price.

In the graphs below, P2 indicates a price above market equilibrium. At P2, there is a surplus equal to the difference between Qs and Qd. P1 indicates a price below market equilibrium. At this price, there is a shortage equal to the difference between Qd and Qs.

Surplus and Shortage



a shortage of Qd - Qs ***a surplus of Qs - Qd***

2.16 IN BRIEF

In your own words…

1. …explain what happens when the exchange price falls below the market equilibrium price.

   _____

   _____

2. …explain what happens when the exchange price rises above the market equilibrium price.

   _____

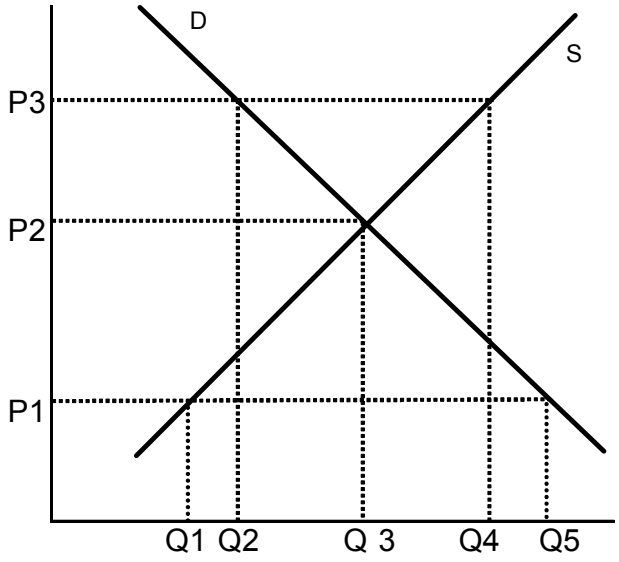
   _____

3. In general, in what terms do we express the amount of a shortage or surplus?

   _____

2.17 FILL-IN

Shooting blanks. Use the graph below to complete the statements that follow. Fill in the blanks as appropriate. When given a choice of sentence completions, circle the answer that BEST completes the statement. Express each shortage or surplus as the difference between two quantities (e.g., "Q4 – Q3").



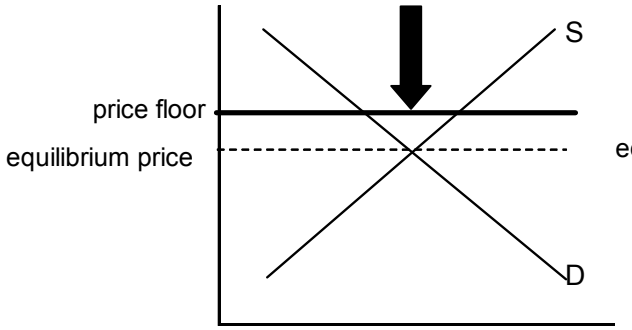
1. At P3, quantity demanded is _____ and quantity supplied is _____.
2. At P2, quantity demanded is _____ and quantity supplied is _____.
3. At P1, quantity demanded is _____ and quantity supplied is _____.
4. At P3, there is a (SHORTAGE, SURPLUS) of _____.
5. At P1, there is a (SHORTAGE, SURPLUS) of _____.
6. What happens at P2? _____

Price and Wage Controls……..……...

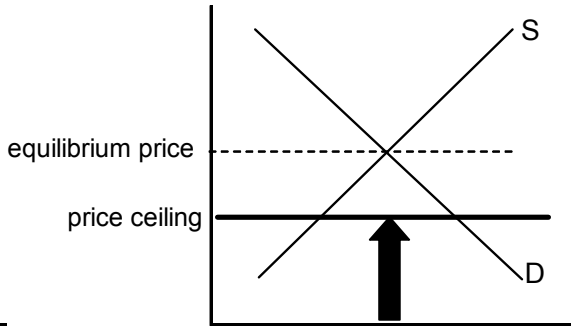
A **price floor** is the lowest price for which a good or service can be sold. We call it a "floor" because the exchange price cannot fall beneath it. Usually not even ghosts fall through the floor. To make a difference, a price floor is set above the market equilibrium price. A surplus will occur if an effective price floor is imposed, and quantity supplied will exceed quantity demanded.

A **price ceiling** is the highest price for which a good or service can be sold. We call it a "ceiling" because the exchange price cannot rise above it. A price ceiling is set below the market equilibrium price. A shortage will occur if a price ceiling is imposed: quantity demanded will exceed quantity supplied.

Price Controls



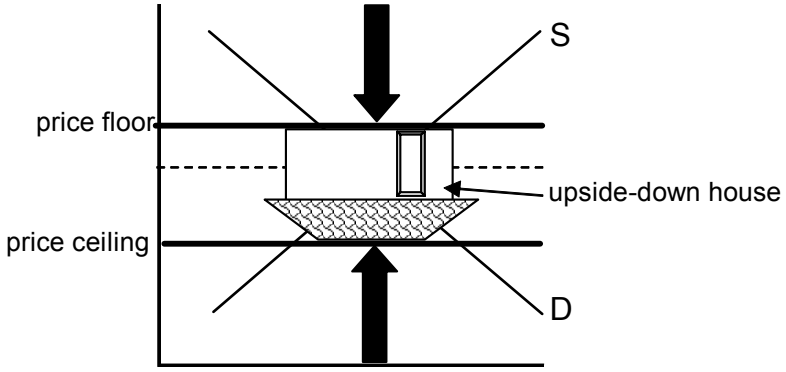
A price floor is set above the market equilibrium price. We call it a "floor" because the price can't go any lower.



A price ceiling is set below the market equilibrium price. We call it a "ceiling" because the price can't go any higher.

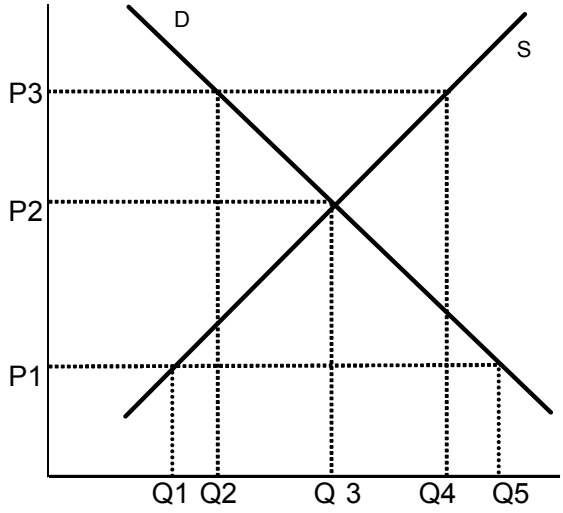
If we graph a price floor and a price ceiling together on the same plane, we will create an upside-down market-house; the ceiling is beneath the floor.

The Upside-Down House of Price Controls



2.18 APPLYING KEY CONCEPTS

Practice makes perfect. Use the graph below to answer the questions that follow. Write your answers in the blanks provided. Express each shortage or surplus as the difference between two quantities (e.g., "Q4 – Q5").



1. Suppose the government insists that prices cannot fall below P3.

   What is being imposed? _____

   What will be the result? _____

   By what quantity? _____

2. Suppose elections are held and the government changes its philosophy. A new law is passed, requiring that prices do not exceed P1.

   What is being imposed? _____

   What will be the result? _____

   By what quantity?_____

3. Suppose the government enacts a new minimum wage.

   What is being imposed? _____

   By which price could the new minimum wage be represented? _____

2.19 SENTENCE COMPLETION

Don't leave me hangin'. Choose the word or phrase that BEST completes each sentence below.

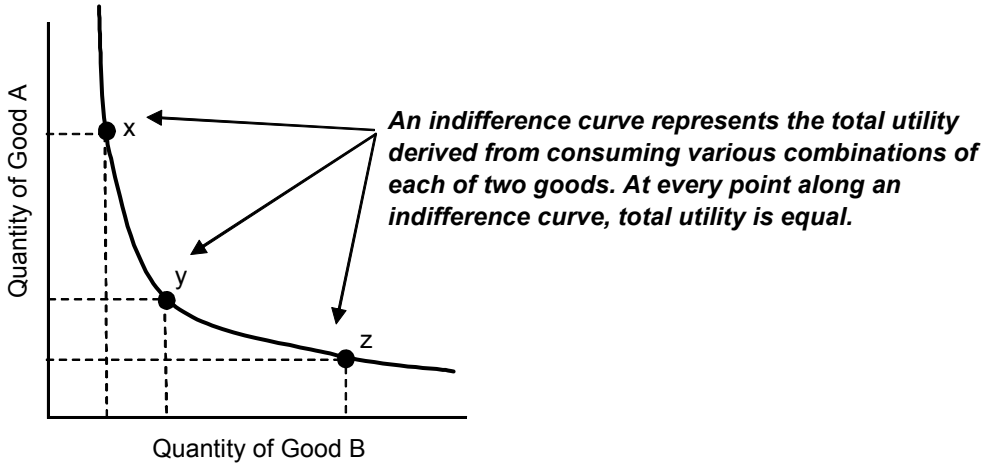
1. If a price floor is imposed, there is a (MINIMUM, MAXIMUM) price (ABOVE, BELOW) the market equilibrium price.
2. If a price ceiling is imposed, there is a (MINIMUM, MAXIMUM) price (ABOVE, BELOW) the market equilibrium price.
3. A price floor will result in a (SURPLUS, SHORTAGE).
4. A price ceiling will result in a (SURPLUS, SHORTAGE).

Utility and Income……...……

Sometimes we have to decide whether to buy more of one good or more of another. We make this decision, in part, on the basis of utility. **Utility** is the satisfaction we get from a good or service.

An **indifference curve** is a graphical representation of the **total utility** we get from consuming various combinations of any two goods. We call it an "indifference curve" because at any point along the curve, the total utility is the same; that is, we are indifferent to which point we choose along the curve. Decathlon tests indifference curves only rarely; however, they are good to understand as a way of grasping consumer preferences.

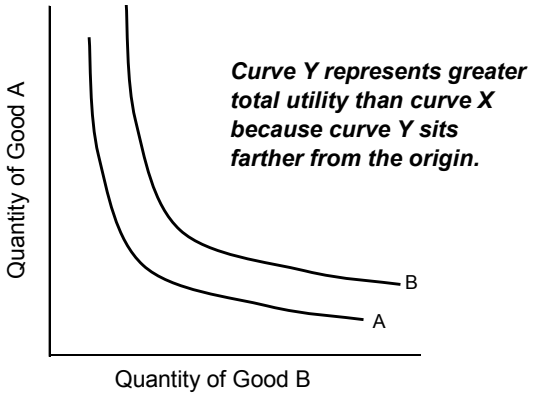
Indifference Curve



In example, suppose you get the same amount of utility from three green highlighters and two yellow highlighters as you get from one green and six yellow highlighters. If that is the case, then both combinations fall along the same indifference curve.

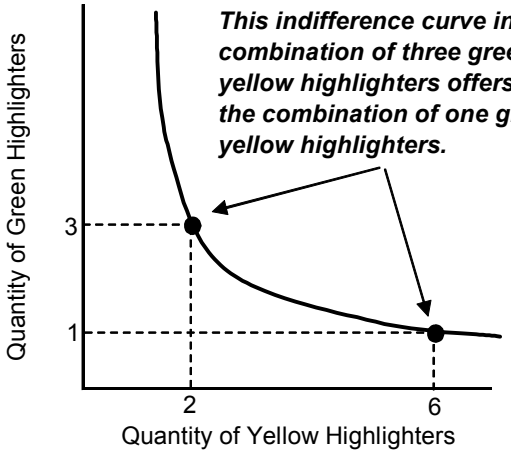
For every two goods we consider buying, we have several indifference curves. Each curve represents a different amount of total utility. An indifference curve that lies close to the origin represents less total utility than a curve that sits farther away from the origin. In other words, total utility is higher all along a curve that sits farther from the origin than it is along a curve that sits closer to the origin.

Multiple Indifference Curves

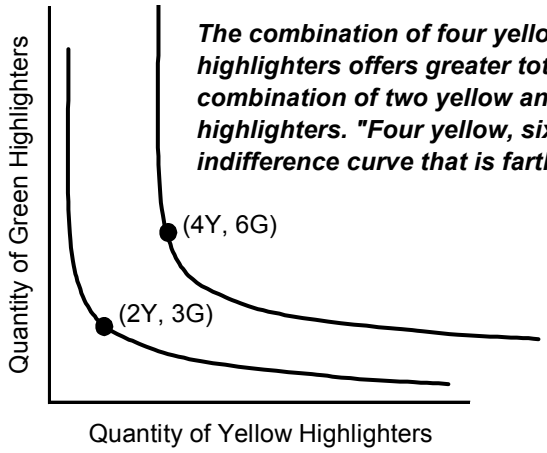


Suppose you get more total utility from six green highlighters and four yellow ones than you get from three green highlighters and two yellow ones. Each combination of highlighters falls on a different indifference curve. The combination of six green highlighters and four yellow ones is represented by a point along a curve that is farther from the origin than the curve on which the other combination falls.

An Indifference Curve for Yellow and Green Highlighters



Multiple Indifference Curves for Yellow and Green Highlighters



2.20 IN BRIEF

The soul of wit. Write a brief response to each question below.

1.

On the graph to the left, which curve represents the greatest total utility?

_____

Why?

_____

_____

_____

_____

2. 

On the graph to the left, which two points represent the same amount of total utility?

_____

Which point represents the greatest amount of total utility?

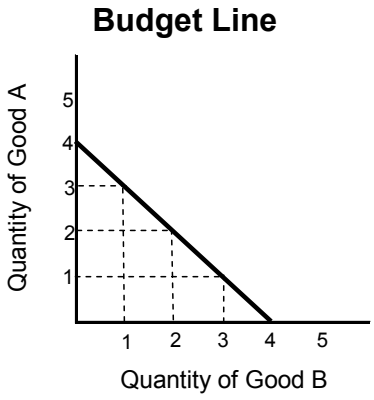
_____

3. What is utility?

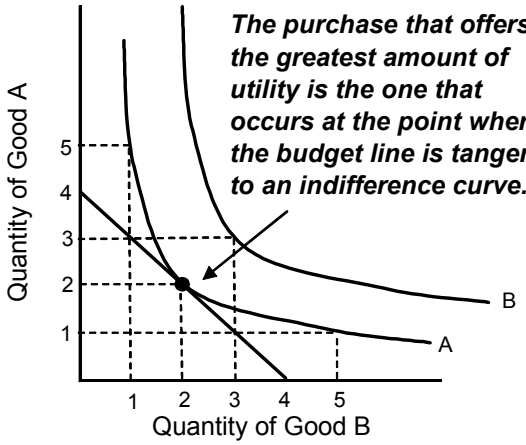
_____

Budget Line……

When faced with a decision between various quantities of two goods or services, rational people will choose the combination that offers the highest total utility. However, the rational person is limited by his **budget**; he can maximize utility, but he can only buy what he can afford. A **budget line** is a graphical representation of the various quantities of two goods or services that a person can afford to buy.

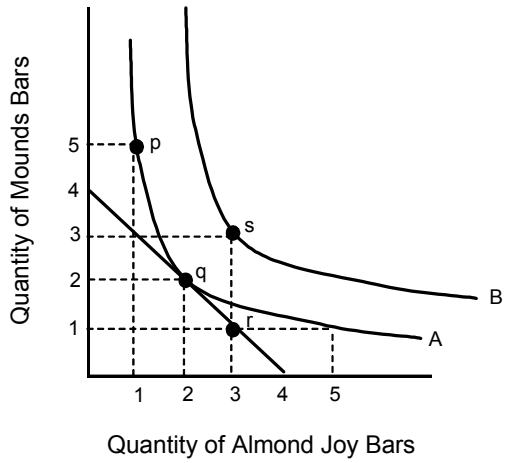


An indifference curve represents what a person is willing to buy. A budget line represents what he is able to buy. In order to maximize utility within his budget, the rational person will buy at the point where his budget line is **tangent** to one of his indifference curves. In economics jargon, this is the **tangency solution** to the consumer's purchase dilemma.



2.21 APPLYING KEY CONCEPTS

Graph-iti. The graph below represents the budget and indifference of Ike, a rational person who is contemplating buying some combination of Mounds Bars and Almond Joy Bars. Review the graph and answer the questions that follow.



1. Which point on the graph represents the greatest total utility?

   _____

2. Which point represents the least total utility?

   _____

3. Can Ike buy at point "s"?

   _____

4. Can Ike buy at point "p"?

   _____

5. Why shouldn't Ike buy at point "r"?

   _____

6. At which point will Ike maximize utility within his budget?

   _____

Elasticity……...

Some non-price variables have a stronger effect on demand than others. We can describe the relationship between two variables in terms of elasticity.

Elasticity is a measure of how responsive one variable is to a change in another. It is expressed as a percentage. In other words, the Y elasticity of X expresses the percent by which variable X will change for each percent change in variable Y.

Elasticity is determined as follows:

$$E(X,Y) = \frac{\%\ \text{Change in X}}{\%\ \text{Change in Y}}$$

the effect is in the numerator

the cause is in the denominator

When we calculate elasticity, the **cause** is in the denominator and the **effect** is in the numerator—that is, the change in the denominator causes the change in the numerator. The percent change in Y is in the denominator; it causes the change in X. The percent change in X is in the numerator; it is the effect of the change in Y.

In practice, the equation for elasticity is broken down this way:

$$E(X,Y) = \frac{\%\ \text{Change in X}}{\%\ \text{Change in Y}} = \left| \frac{\dfrac{\text{Change in X}}{\dfrac{X_n + X_o}{2}}}{\dfrac{\text{Change in Y}}{\dfrac{Y_n + Y_o}{2}}} \right| \times 100\% \quad E(X,Y)$$

"X_n" and "X_o" refer to "new X" and "old X," respectively.

The **coefficient of elasticity** is the absolute value of E(X,Y) before it is converted to a percentage. If it is greater than 1, then variable X is **elastic** with respect to Y. We can also say that "X is Y-elastic." In other words, an incremental change in Y will elicit a substantial response in variable X. If E < 1, then X is **inelastic** with respect to Y; an incremental change in Y will elicit little response in variable x. If E = 1, then X is **unit elastic** with respect to Y. An incremental change in Y will result in a change of equal increment in X.

Interpreting the Coefficient of Elasticity

E(X,Y) = 1.62	E(X,Y) = 1	E(X,Y) = 0.5
"X is Y-elastic"	**"X is unit-elastic with respect to Y"**	**"X is Y-inelastic"**

If you tuned out during this page because of all the letters and equations, you're not alone. But go back and reread it. The most important point to take home is that elasticity is *amount of change* over *cause of change*. Thus, the higher the elasticity, the greater the change resulting from any given cause.

2.22 SENTENCE COMPLETION

Retention check. Choose the word or phrase that BEST completes each sentence, below. Circle your answer choices.

1. Variable X is said to be [ELASTIC, INELASTIC, UNIT ELASTIC] with respect to Y if E(X,Y) >1.
2. Variable X is said to be [ELASTIC, INELASTIC, UNIT ELASTIC] with respect to Y if E(X,Y) <1.
3. Variable X is said to be [ELASTIC, INELASTIC, UNIT ELASTIC] with respect to Y if E(X,Y) =1.
4. Elasticity is a measure of [RESPONSIVENESS, DURABILITY].
5. In the equation for elasticity, the [CAUSE, EFFECT] of the change is in the denominator. The [CAUSE, EFFECT] of the change is in the numerator.
6. The Y elasticity of X is a measure of [HOW RESPONSIVE Y IS TO INCREMENTAL CHANGES IN X, HOW RESPONSIVE X IS TO INCREMENTAL CHANGES IN Y].

2.23 APPLYING KEY CONCEPTS

Plug-ins. In this exercise, you'll practice calculating E(X,Y) by answering a few questions and then plugging values into the equation for elasticity. An example has been completed for you.

Ex: *Y changes from 19 to 21. In response, X changes from 72 to 65.*

a. What is the change in X?	$X_n - X_o$	=	65 – 72 = -7
b. What is the average value of X in this region?	$\frac{X_n + X_o}{2}$	=	(72 + 65) / 2 = 68.5
c. What is the change in Y?	$Y_n - Y_o$	=	21 – 19 = 2
d. What is the average value of Y in this region?	$\frac{Y_n + Y_o}{2}$	=	(21 + 19) / 2 = 20
e. What is the Y elasticity of X?	$\frac{\%\text{ Change in X}}{\%\text{ Change in Y}}$	=	| (7 / 68.5) / (2 / 20) x 100% | = 102 %

1. *Y changes from 10 to 15. In response, X changes from 50 to 60.*

a. What is the change in X?	$X_n - X_o$	=	
b. What is the average value of X in this region?	$\frac{X_n + X_o}{2}$	=	
c. What is the change in Y?	$Y_n - Y_o$	=	
d. What is the average value of Y in this region?	$\frac{Y_n + Y_o}{2}$	=	
e. What is the Y elasticity of X?	$\frac{\%\text{ Change in X}}{\%\text{ Change in Y}}$	=	

2. *Y changes from 28 to 30. In response, X changes from 100 to 80.*

a. What is the change in X?	$X_n - X_o$	=	
b. What is the average value of X in this region?	$\frac{X_n + X_o}{2}$	=	
c. What is the change in Y?	$Y_n - Y_o$	=	
d. What is the average value of Y in this region?	$\frac{Y_n + Y_o}{2}$	=	
e. What is the Y elasticity of X?	$\frac{\%\text{ Change in X}}{\%\text{ Change in Y}}$	=	

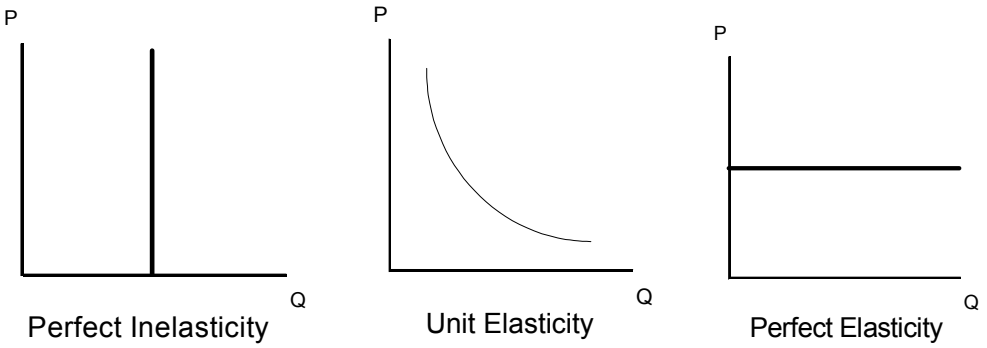
Price-Elasticity of Demand (PED)…….....……

The **price elasticity of demand** is a measure of how responsive quantity demanded is to changes in price. It is determined as follows:

$$\text{PED} = \frac{\%\ \text{Change in Quantity Demanded}}{\%\ \text{Change in Price}}$$

If demand is perfectly inelastic with respect to price, then quantity demanded will be unaffected by changes in price. On a graph, **perfect inelasticity** is a straight vertical line. On the other hand, if demand is perfectly elastic with respect to price, then any change in price will completely eliminate the possibility of exchange. On a graph, **perfect elasticity** is a horizontal line. **Unitary elasticity** describes a "one-to-one" relationship of two variables. A percentage increase in price will decrease quantity demanded by exactly the same percentage (the same unit). On a graph, unitary price elasticity of demand is represented by a smooth curve, bowed inward toward the origin.

Price Elasticity of Demand



Cross-Price Elasticity of Demand (CPED)

The **cross-price elasticity of demand (CPED)** indicates how much a change in the price of one good will affect the demand for another. The elasticity of the quantity demanded of Good A with respect to the price of Good B is determined as follows:

$$\text{CPED} = \frac{\%\ \text{Change in Quantity Demanded of Good A}}{\%\ \text{Change in Price of Good B}}$$

When the coefficient of elasticity is **positive**, the two goods are **substitutes**. When it is **negative**, the two goods are **complements**. If CPED = 0, or if the coefficient is very close to zero, the two goods are independent. **Cross-price elasticity of demand is not expressed in absolute values.**

Income Elasticity of Demand (YED)

The **income elasticity of demand (YED)** is a measure of how much **demand** (not quantity demanded) will respond to incremental changes in consumer income. It indicates how much the **whole demand curve** shifts horizontally in response to a change in consumer income. Consumers typically demand more when they have more to spend. In general, the demand for **luxury goods** is most sensitive to income changes. The demand for **necessities** tends to be less sensitive. YED is determined as follows:

$$\text{YED} = \frac{\%\ \text{Change in Demand}}{\%\ \text{Change in Consumer Income}}$$

With **normal goods**, an increase in income results in an increase in consumption. The relationship is positive, so for a normal good, YED is **positive**. With **inferior goods**, an increase in income results in a decrease in consumption, because consumers become more able to buy nicer alternatives. Income is inversely related to the demand for an inferior good, so YED for an inferior good is **negative**.

We calculate income elasticity at a **given price**. We calculate price elasticity at a **given income**.

2.24 CATEGORIZATION

Mind stretch. In this exercise, you'll see the coefficient of the price elasticity of demand for some good. In each problem, indicate whether demand is elastic ("E"), inelastic ("I"), or Unit Elastic ("U").

E = Elastic I = Inelastic U = Unit Elastic

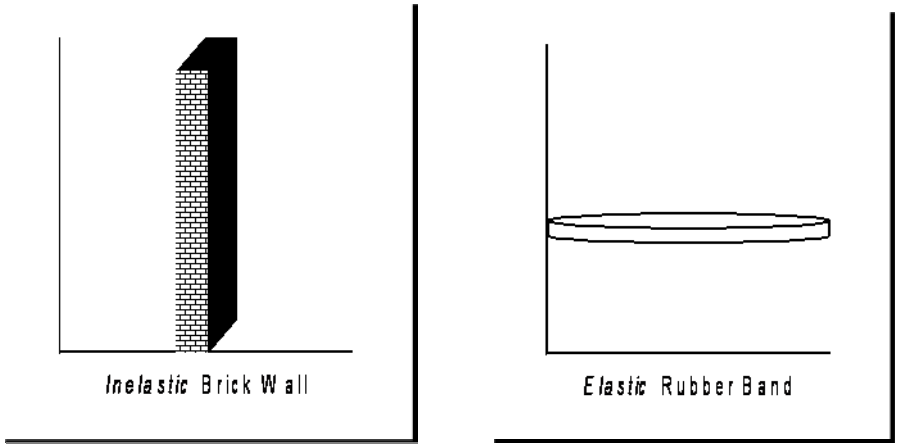
1. _____ 1.32
2. _____ 1.00
3. _____ 0.96
4. _____ 0.12
5. _____ 0.04
6. _____ 1.37
7. _____ 1.08
8. _____ 0.36
9. _____ 1.52
10. _____ 1.11

Elasticity According to Craig.....

In years past, DemiDec "math guy" Craig Chu has offered a helpful suggestion for visualizing the price-elasticity of a demand curve. Craig observes:

Brick walls are vertical, and very inelastic.
An inelastic demand curve is vertical, like a brick wall.

An elastic demand curve is horizontal.
It's like a rubber band you would shoot at somebody.



2.25 WORD BANK

Bank on it. Complete each statement below with a word or phrase from the Word Bank. Any answer choice may be used more than once.

Word Bank		
inferior normal complements	unit elastic substitutes	elastic inelastic independent

1. A 16 percent increase in price results in a 16 percent decrease in quantity demanded. With respect to price, quantity demanded is _____.
2. A 10 percent change in price results in a 50 percent change in quantity demanded. With respect to price, quantity demanded is _____.

3. A 26 percent increase in consumer income results in a 13 percent decrease in quantity demanded. With respect to consumer income, quantity demanded is _____. This is a(n) _____ good.
4. A 20 percent change in price results in a 5 percent change in quantity demanded. With respect to price, quantity demanded is _____.
5. A 22 percent increase in consumer income results in a 22 percent increase in the quantity demanded of Good M. With respect to consumer income, quantity demanded is _____. M is a(n) _____ good.
6. A 5 percent increase in the price of good X results in a 10 percent increase in the demand for good Y. X and Y are _____.
7. Demand for Z remained stationary after a 50 percent increase in the price of Q. In terms of cross-price elasticity, Z and Q are _____ goods.
8. If the price of J increases by 12 percent, the quantity demanded of K will decrease by as much as 20 percent. J and K are _____.
9. If the price of R increases by 5 percent, the quantity demanded of S will increase by 5 percent. R and S are _____.
10. If consumer income rises by 6 percent, demand for E will fall by 12 percent. E is a(n) _____ good.
11. If consumer income increases by 8 percent, demand for F will increase by 10 percent. F is a(n) _____ good.
12. A 14 percent increase in the price of good C results in a 30 percent decrease in the quantity demanded of C. With respect to price, demand for C is _____.
13. Although the price of N has fluctuated severely in the past 10 weeks, the quantity demanded of N has not changed. With respect to price, the demand for N is perfectly _____.

2.26 IN BRIEF

Short and sweet. Write a brief response to each of the following prompts.

1. What do you know about the relationship between two goods when the coefficient of the cross-price elasticity of demand is positive?

   _____

2. What do you know about the relationship between two goods when the coefficient of the cross-price elasticity of demand is negative?

   _____

3. What do you know about the relationship between two goods when the coefficient of the cross-price elasticity of demand is near zero?

   _____

4. Explain what is measured by the Y elasticity of X.

   _____

5. Explain what is measured by the income elasticity of demand.

   _____

6. Explain what is measured by the price elasticity of demand.

   _____

7. For what type of good is demand most sensitive to changes in consumer income?

   _____

8. For what type of good is demand inversely related to changes in consumer income?

   _____

Factors that Affect the Price Elasticity of Demand.....

Consumers respond predictably to changes in the price of a good or service. One factor that affects the price elasticity of demand is **the number of substitutes** available in the market. If consumers can easily switch to another product, then a price increase will probably cause them to do so. The price elasticity of demand is also affected by the **price of a good as a proportion of a consumer's disposable income**. The demand for a good whose price is a large proportion of consumer income tends to be **more price-elastic**. On the other hand, the demand for a good whose price is a small proportion of consumer income tends to be less price-elastic. Another factor is **time**. When consumers have a substantial amount of time to respond to a change in price, their demand for a good is relatively price-elastic. If consumers don't have much time to respond to a change in price, their demand for a good is relatively price-inelastic.

2.27 CATEGORIZATION

On point. In this exercise, you are shown what happens to a factor of elasticity. In response, indicate what happens to the dependent variable in the column on the right by drawing an arrow in the appropriate direction.

	IF:	GOES:	THEN:	GOES:
Ex:	Number of mysterious "fees" I dispute on my cell phone bill	↑	Number of "fees" my cell phone company apologizes for, then removes[6]	↓
1.	Consumer income	↑	Quantity demanded of inferior goods	
2.	Time consumers have to respond to changes in price	↑	Price elasticity of demand	
3.	Consumer income	↓	Demand for luxury goods	
4.	Number of available substitutes	↑	Price elasticity of demand	

[6] Sometimes, you just can't take "no"—or, "that will be $35, please"—for an answer. My cell phone carrier isn't the only company that seems to arbitrarily assign fees, either. My school charges every student a $360 "New Student Fee," in excess of tuition. I haven't met anyone who can tell me exactly what they got for their $360. – Jessica

5.	Price of a good as a proportion of consumer income	↓	Price elasticity of demand	
6.	Consumer income	↑	Demand for BMWs	
7.	College student income	↓	Demand for macaroni & cheese (the kind that comes in a box with a little white pouch of bright orange cheese-substance)	
8.	Number of available cell phone carriers	↑	Price elasticity of demand for cell phone service	

2.28 LISTING

Checkin' it twice… List three factors that influence the price-elasticity of demand.

1. _____
2. _____
3. _____

2.29 SENTENCE COMPLETION

"You complete (HIM, ME)." Circle the word or phrase that best completes each statement, below.

1. The demand for wheat is (PRICE-ELASTIC, PRICE-INELASTIC).
2. When you need to catch a flight that leaves in 30 minutes, your demand for the ticket is relatively (PRICE-ELASTIC, PRICE-INELASTIC). When you need to catch a flight that leaves in 30 days, your demand for the ticket is relatively (PRICE-ELASTIC, PRICE-INELASTIC).
3. A consumer's demand for a pair of running shoes is probably (MORE, LESS) price-elastic than his demand for a pair of luxury sports cars.
4. The demand for student apartments near a university campus is relatively (PRICE-ELASTIC, PRICE-INELASTIC).
5. The demand for running water is (MORE, LESS) price-elastic than the demand for bottled water.

Market Structures…….....

Economists try to identify market structures in order to understand how firms and consumers behave. We characterize market structures by the number of buyers or sellers who are present, by the relative ease with which a new seller may enter the market, by the variation in the product from one supplier to the next, and by the amount of competition present.

Perfect Competition

Perfect competition is the most competitive market structure. A market with perfect competition has a **large number of buyers and sellers**. In this type of market, there are **no barriers to entry or exit**, which means a new seller will have a fairly easy time if he wants to start doing business. The product is

homogeneous, in the sense that one bushel of wheat isn't really all that different from any other bushel of wheat. A perfectly competitive market is also characterized by the availability of **perfect information**, or free and equal access for everyone to information about the product, its price, and the firms. A firm in perfect competition sells a product with **perfectly price-elastic demand** (the "rubber band" variety). The firm is forced to be a **price-taker**. It has no choice but to sell at the market price. If a firm sells its product at a price over the market price, it won't earn any revenue—since goods are homogeneous, consumers will simply switch to another firm's product.

Examples of Perfectly Competitive Markets	
• **wheat**	• **silver**
• **livestock**	• **euros**
• **gold**	• **yen**

2.30 IN BRIEF

Short answer. Write a response to each of these prompts about perfectly competitive markets.

1. How many buyers and sellers are there?

   _____

2. How easy or difficult is it for a new seller to enter the market?

   _____

3. How price elastic is the demand for the product?

   _____

4. How different is one seller's product from the next?

   _____

5. How much information is available to buyers and sellers about the market?

   _____

6. How does a seller decide upon a sale price?

   _____

Monopolistic Competition.....

A market with **monopolistic competition** is the second-most competitive market type. It is characterized by a **large number of sellers** and **few barriers to entry or exit**. Competition occurs in the form of **product differentiation**. By **branding**, firms hope to convince buyers of the uniqueness of their products. Advertising and packaging are essential to branding. In perfect competition, perfect information is freely and easily available to everyone; by contrast, in monopolistic competition, firms must rely on some amount of consumer ignorance in order for their advertising to be effective.

The aim of **product differentiation** is not merely to make a one-time sale. Firms want consumers to develop **brand loyalty**. If a consumer believes that a particular brand is superior, then she will be unlikely to consider other suppliers' products as substitutes. With fewer substitutes available, demand becomes price inelastic. If a firm can successfully differentiate its product, it can earn above-normal profit in the short run. In the long run, most firms will earn normal profits.

Examples of Monopolistic Competitive Markets	
• **ice cream**	• **clothing**
• **pantyhose**	• **convenience stores**
• **athletic shoes**	• **shampoo**

2.31 IN BRIEF

Mark my words. Write a brief response to each of the following questions about a market with monopolistic competition.

1. How many buyers and sellers are there?

   _____

2. How easy or difficult is it for a new seller to enter the market?

   _____

3. How different is one seller's product from the next?

   _____

4. What are some of the techniques sellers use to try to differentiate their products?

   _____

2.32 CATEGORIZATION

What type of market is it? In part A, determine whether each market listed is an example of Perfect Competition (PC) or Monopolistic Competition (MC). In part B, determine whether each item is a characteristic of Perfect Competition or Monopolistic Competition, or both (PC and MC). Circle your answer choices.

A.

1.	PC	MC	breakfast cereal
2.	PC	MC	wheat
3.	PC	MC	fast food
4.	PC	MC	milk
5.	PC	MC	video rentals

B.

6.	PC	MC	large number of buyers and sellers
7.	PC	MC	advertising is critical to short-run economic profit
8.	PC	MC	the seller "takes" the market price
9.	PC	MC	the seller aims to maximize profit
10.	PC	MC	perfect information is available
11.	PC	MC	the seller's strategy is to create price-inelastic demand
12.	PC	MC	demand is perfectly price elastic
13.	PC	MC	the most competitive market structure
14.	PC	MC	the second-most competitive market structure
15.	PC	MC	the product is homogeneous

Oligopoly.....

An **oligopoly** is less competitive than a market with monopolistic competition. It has only a **few sellers** who produce either **homogeneous** or **slightly differentiated products**.

There are **steep barriers to entry** in an oligopoly. Barriers can be **artificial**, as in the examples of patents, trademarks, copyrights, or regulation. Barriers can also be **natural**, as in the case of only a few firms controlling all the available resources that are critical to production.

A market can evolve into an oligopoly if a few firms manage to capture **economies of scale**. An economy of scale is a savings, which results from the size ("scale") of the firm. Large firms can buy raw materials at bulk discount rates, for example. If a small handful of firms become low-cost producers, they will drive higher-cost producers out of business and create an oligopoly. Potential new entrants may be discouraged by the industry's high start-up cost.

The few sellers in an oligopoly are **interdependent**. An action by one will impact all the others. If one firm tries to raise its price, the firm's market share will be lost to its competitors. Clearly, no firm wants to lose its market share, so no firm will be foolish enough to attempt a price increase. On the other hand, if one firm lowers its price, then the other firms will be forced to lower their prices, too. In the end, each firm will be left with the same market share, but everyone will earn a smaller profit. As it turns out, there is almost no incentive to raise or lower prices in an oligopoly. The firms must engage in **non-price competition**.

To be successful in the long run, the firms in an oligopoly must work at **maintaining the market structure**. In other words, they have to try to remain in an oligopoly. In a market economy, the strategic behavior of the firms in an oligopoly can be very aggressive. Without regulation, it can quickly become anti-competitive, too.

Historically, oligopolistic markets have seen all kinds of now-illegal behavior, all at the hands of firms who aimed to maintain market power. One anti-competitive strategy is **collusion**. When a few firms collude, they agree to divide the market among themselves, or to fix the market price. In effect, they eliminate the need to compete for business by agreeing not to compete at all. Collusion results in all sorts of inefficient and inequitable problems, including higher prices and lower output.

Another anti-competitive strategy is to pressure legislators to create tough, new regulations for any firm that wishes to enter the market. If this strategy is carried out successfully, then the new regulations will be easily met by the existing firms, but nearly impossible for a new entrant to satisfy. As a result, the barriers to entry will be so high that new suppliers cannot enter. This is common in the airline industry. Other oligopolies engage in **price leadership**: when one firm raises prices, the rest follow.

Examples of Oligopolistic Markets	
• **steel**	• **automobiles**
• **oil**	• **breakfast cereal**
• **tobacco**	• **airlines**

2.33 IN BRIEF

Short answer. Write a brief response to each of the following questions about oligopolies.

1. How many buyers and sellers are there in an oligopoly?

   _____

2. How easy or difficult is it for a new seller to enter an oligopoly?

   _____

3. How different is one seller's product from the next in an oligopoly?

   _____

4. How does a seller in an oligopoly decide upon a sale price?

   _____

5. What is the long-run strategy of a firm in an oligopolistic market?

   _____

6. What are some ways in which existing firms try to prevent new suppliers from entering an oligopoly?

   _____

Monopoly.....

A **monopoly** is the least competitive market structure. It has only **one seller**. There are **no substitutes** to a truly monopolized good, so the firm can be a **price searcher** (or **price seeker**)**.** The firm can produce and sell its product in the sole interest of profit maximization.

A monopoly can develop for a number of reasons. A **natural monopoly** results when it seems impractical for multiple firms to control a single resource, as is often the case with public utilities, such as electricity. Also, if a firm captures **economies of scale**, it can prevent other firms from being able to produce at a cost that would allow them to be competitive. A firm that holds a **copyright** or a **patent** has an **artificial monopoly**.

Monopolies can be problematic. One reason is that the product **scarcity is partially contrived**. A firm can withhold resources from consumers in order to earn a higher price. A second reason is **welfare loss**, or "**deadweight loss."** When a firm withholds goods, it eventually sells fewer goods, as some consumers can't afford the higher price. As a result, production must decrease. Although the price rises above the market equilibrium price, there is no surplus. The lost surplus is the "welfare loss." **X-inefficiency** is another reason why monopolies often take heat. Without competition, there is little incentive to keep costs down; resources may used inefficiently.

Examples of Monopolistic Markets	
• **postage stamps**	• **trash collection**
• **cable TV service**	• **public transportation**
• **patented pharmaceuticals**	• **electricity**

2.34 MATCHING

Got a light? Match each term in the column on the left to a description in the column on the right.

a. deadweight loss
b. X-inefficiency
c. collude
d. price war
e. price leadership
f. contrived
g. economies of scale
h. copyrights, trademarks, and patents
i. price searcher
j. price taker
k. non-price
l. branding

1. _____ an approach to product differentiation
2. _____ what is lost in a monopoly when the selling price rises above the equilibrium price but there is no surplus
3. _____ the role of a seller in perfect competition
4. _____ the problem of resources being used inefficiently due to the lack of competition in a monopoly
5. _____ what firms in an oligopoly do when they agree to fix prices or to divide the market among themselves
6. _____ savings that are captured by a firm because of its size and buying power
7. _____ the kind of scarcity that can exist in a monopoly
8. _____ what happens if one firm in an oligopoly lowers its selling price and the others decide to compete
9. _____ the role of a monopoly firm in determining its selling price
10. _____ ways in which an artificial monopoly or oligopoly can be created
11. _____ the type of competition in which firms in an oligopoly must engage
12. _____ what happens when one firm, typically in an oligopoly, sets a price and the other sellers in the market follow by selling at the same price

2.35 IN BRIEF

Speak softly and carry a big stick. Write a brief response to each of the following questions about monopolies.

1. How many buyers and sellers are there in a monopoly?

   _____

2. How easy or difficult is it for a new seller to enter a monopoly?

   _____

3. How does a firm in a monopoly decide upon a selling price?

   _____

4. What is the long-run strategy of a firm in a monopoly?

   _____

5. What are some of the problems with a monopoly?

   _____

2.36 CATEGORIZATION

Set a good example. Match one market structure to each market example listed below. Answers will be used more than once.

Types of Competition

Perfect competition
Monopolistic competition
Oligopoly
Monopoly

Industry Examples

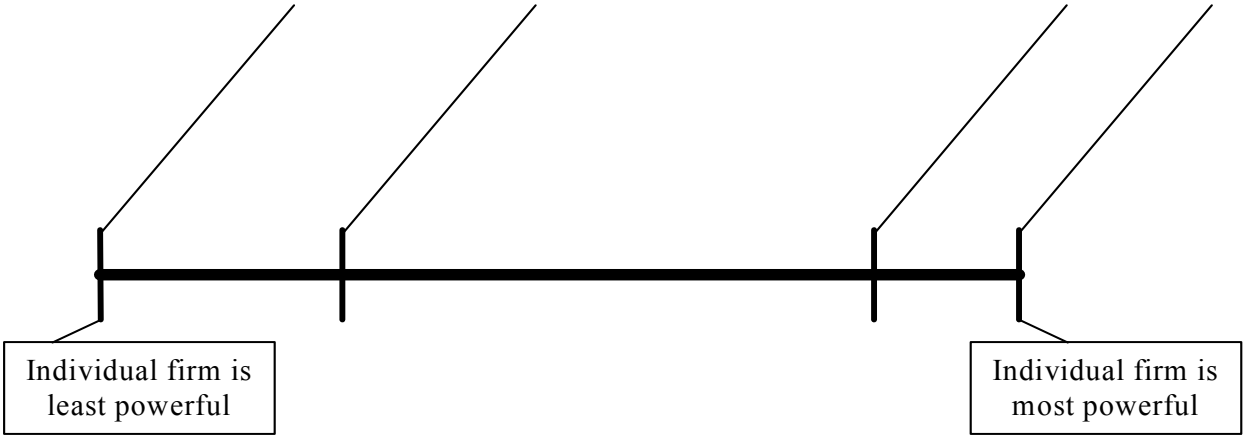
1. _____ backpacks
2. _____ wheat
3. _____ automobiles
4. _____ personal computers
5. _____ eggs
6. _____ airlines
7. _____ personal injury law firms
8. _____ breakfast cereals
9. _____ electricity
10. _____ milk
11. _____ athletic footwear
12. _____ water (as a public utility)
13. _____ hamburger stands
14. _____ shampoo
15. _____ cigarettes

2.37 APPLYING KEY CONCEPTS

In the scheme of things. In this exercise, you'll create a spectrum, representing the power of the individual firm in each type of market we've discussed. Arrange them in order from least powerful on the left to most powerful on the right. Use the market types listed below to label each point on the spectrum.

Market types:

MONOPOLISTIC COMPETITION
OLIGOPOLY
MONOPOLY
PERFECT COMPETITION



Production Decisions…….....

Firms are profit-maximizers. In the right market conditions, a firm needs only to determine how many units to sell to decide how it will achieve profit-maximization. But when market conditions are less desirable, a firm may be faced with less-desirable decisions. In this workbook, we'll examine the simple production decision of the firm in perfect competition; there are other situations, of course. Although they are beyond the scope of this workbook, you can certainly find them in an advanced economics text.

Costs and the Short Run

Firms must fully understand their costs in order to make effective production decisions. In the **short run**, firms have both fixed costs and variable costs. **Variable costs** increase or decrease with the level of production. If the firm does not produce anything, it occurs no variable costs. Typically, variable costs include employee wages, the costs of the raw materials used for production, and plant utilities. On the other hand, **fixed costs** cannot be changed in the short run. Fixed costs include rent and administrative salaries. A marginal change in production will not affect fixed costs. By definition, the **long run** is a period over which all costs are variable.

Some other costs include:

Marginal cost: the change in total cost that will result from producing one more unit. At first, the marginal cost decreases as more units are produced and production becomes more efficient. Eventually, marginal cost begins to increase as a firm approaches its peak productive capacity.

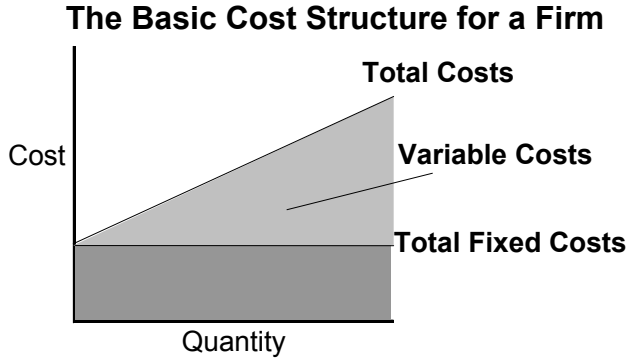
Marginal revenue: the change in total revenue that will result from producing and selling one more unit.

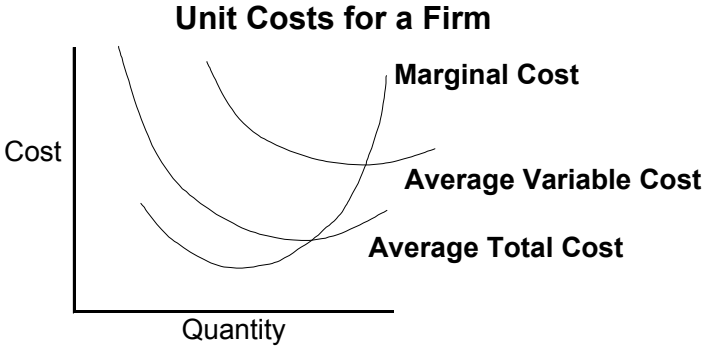
Total cost: the sum of total variable costs and total fixed costs.

Average variable cost: the variable cost per unit of production.

Average fixed cost: equal to the total fixed costs divided by the total quantity produced; the fixed cost per unit of production.

Average total cost: equal to total costs divided by quantity; the total cost per unit of production. Average total cost declines as more units are produced, to a point. Then the law of diminishing returns kicks in again and it becomes increasingly expensive to continue producing more. Note that the top graph below is greatly simplified.





2.38 MATCHING

Match-stick girl. Match the letter of each on the left to a description on the right.

a. marginal cost
b. marginal revenue
c. profit maximization
d. fixed costs
e. variable costs
f. average total cost
g. average fixed cost
h. average variable cost
i. total cost
j. short run

1. _____ the goal of a firm
2. _____ the total cost per unit of production
3. _____ the change in total cost that results from one more unit of production
4. _____ the period over which some costs are fixed and some are variable
5. _____ the fixed cost per unit of production
6. _____ the variable cost per unit of production
7. _____ costs that vary with the level of production
8. _____ the change in total revenue that is gained by producing and selling one more unit
9. _____ costs that remain constant in total, regardless of the level of production

2.39 CATEGORIZATION

Get your pets fixed. Or let them be variable, whatever that might mean. Determine whether each expense below is a fixed cost or a variable cost to a firm. Circle "F" or "V" as appropriate.

1.	F	V	a lease payment on a vehicle
2.	F	V	rent
3.	F	V	utilities to operate factory equipment
4.	F	V	salaries of top-level management
5.	F	V	utilities to operate administrative facilities
6.	F	V	property taxes
7.	F	V	interest payments
8.	F	V	raw materials
9.	F	V	hourly pay to part-time employees
10.	F	V	depreciation of equipment

The Production Decision.....

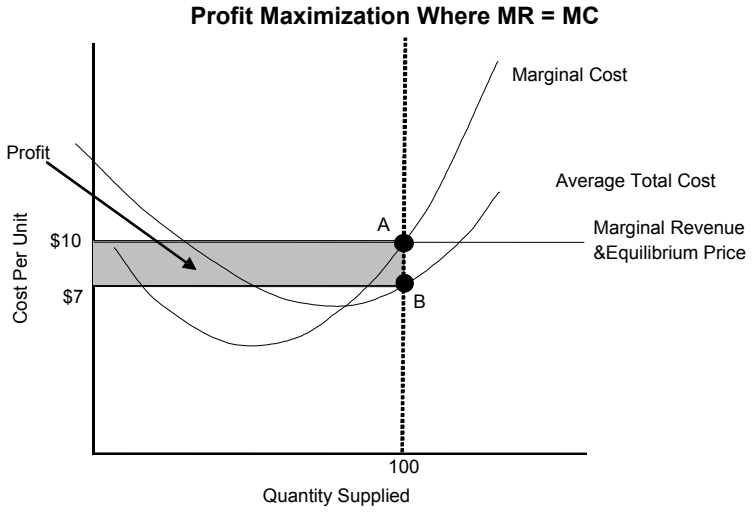
A firm's production decision is a decision about how much to produce. Every firm must aim to maximize profit. A firm cannot survive if it does not earn a profit. A firm must closely analyze its cost structure to determine the level of production that will maximize profit.

A firm in perfect competition has no ability to change its selling price. The firm can only control its costs. In the short run, the only costs that can be controlled are variable costs. We assume that variable costs per unit do not change in the short run. A firm controls its variable costs by limiting the amount it produces to what it can afford.

For the sake of simplicity, the following explanation assumes that everything produced is sold:

In the short run, **a firm in perfect competition will maximize profit by producing at the point where marginal revenue equals marginal cost**. Because the firm cannot change the selling price, its marginal revenue is equal to the **market equilibrium price** by default. As long as marginal revenue exceeds marginal cost, the firm can continue to increase production. But at some point, increasing production will no longer result in an equal or greater increase in revenue. For example, when a factory reaches its peak capacity, the only way to add one more unit of production is to expand the factory—and that will cost far more than the revenue earned from one more unit of production.

In the graph below, the firm produces and sells 100 units. This is the quantity where marginal revenue equals marginal cost, at point A. At 100 units, the firm's total cost per unit (average total cost) is actually only $7, well below the market price of $10. With its current cost structure, the firm maximizes profit by producing and selling 100 units; the firm earns $3 profit on every unit, for a total of $300.



2.40 IN BRIEF

Keep it down. Briefly respond to each of the following.

1. How does a firm in perfect competition decide what quantity to produce in order to maximize profit?

   _____

   _____

2. How does a firm in perfect competition control costs in the short run?

   _____

   _____

3. Why wouldn't a firm want to produce and sell at a point where marginal revenue equals average total cost?

   _____

   _____

   _____

The Institutions of a Market Economy…….....

An **institution** is an organization, a practice, or a relationship. Some institutions are critical to the function of a market economy. They enable groups and individuals to accomplish social and economic goals.

Financial Intermediaries

A **financial intermediary** is an institution that borrows money from people who have saved it and then lends money to people who need it. Financial intermediaries are the most heavily-regulated institutions in the U.S. They include depository institutions (such as banks) and contractual savings institutions (such as insurance companies).

A **depository institution** is one kind of financial intermediary. People who **deposit** their funds in depository institutions are paid **interest** for the use of their funds. Depository institutions **invest** the funds they have borrowed and earn interest on their investments.

A **bank** is the most common example of a depository institution. A bank accepts deposits and makes **loans**. People use banks to earn interest on their savings and to borrow the funds they need to invest.

Examples of Depository Institutions
• **banks**
• **savings and loan associations**
• **mutual savings banks**
• **credit unions**

Another kind of financial intermediary is a **contractual savings institution**, which is an institution that accepts periodic payments from customers (according to the terms of some sort of contract) and invests those funds to earn interest.

An **insurance company** is the most common example of a contractual savings institution. People pay periodic **premiums** to an insurance company and the company makes long-term investments with those funds. The company agrees to provide certain **benefits** in return for the payment of premiums.

Examples of Contractual Savings Institutions
• **insurance companies**
• **pension funds**
• **government retirement funds**

2.41 IN BRIEF

Short and sweet. Write a brief response to each of the following questions.

1. What is an institution?

   _____

   _____

2. Why are some institutions essential to the function of a market economy?

   _____

   _____

3. What is a financial intermediary?

   _____

   _____

4. What is a depository institution?

   _____

   _____

5. What is a bank?

   _____

   _____

6. How does a bank collect money?

   _____

   _____

7. How does a bank earn a profit?

   _____

   _____

8. What is a contractual savings institution?

   _____

   _____

9. How does an insurance company collect money?

   _____

   _____

10. How does an insurance company earn a profit?

    _____

    _____

2.42 CATEGORIZATION

Institutionalized. Indicate whether each institution below is an example of a depository institution ("D") or a contractual savings institution ("CS"). Circle your answer choices.

D = Depository Institution	CS = Contractual Savings Institution

1. D CS bank
2. D CS government retirement fund
3. D CS mutual savings bank
4. D CS credit union
5. D CS insurance company
6. D CS pension fund
7. D CS savings and loan association

2.43 THINK FAST!

Spit it out. What kind of institution is most heavily-regulated in the U.S.?

_____

Labor Unions…….....

Labor unions are an important institution in the U.S. because they help individual laborers to accomplish their goals. A **labor union** is a group of laborers who work together to accomplish social and economic goals in the workplace. By making demands as a group, laborers increase their **market power** as suppliers in the labor market. An effective labor union can pressure employers to fulfill wage requirements or to take measures to protect the health and safety of their employees.

A **craft** or **trade union** is a group of laborers who possess a common skill, though they may not work for the same employer. Craft unions help limit the supply of "qualified" laborers by restricting membership and advocating licensing requirements. Professional associations are craft unions.

An **industrial union** is a group of laborers from the same industry. The members do not necessarily have the same skills.

A **public employees' union** is a group of government employees.

Labor unions interact with employers in a process called **collective bargaining**. In this process, employers meet with representatives of their laborers. The representatives are people who are either in a labor union or who have been hired to represent one. The representatives negotiate with employers about wages, hours, benefits, and other employee concerns.

Sometimes, when employers do not respond to their workers' requests, labor unions use aggressive tactics to make their employers more willing to meet their demands. If the tactics are effective, then a labor union will manage to interfere with an employers' business so much that the employer will see no alternative but to quickly negotiate and try to satisfy the laborers' demands.

In a **strike**, workers simply stop working until their union has come to an agreement with their employer over the issue in question. A strike is effective if an employer cannot continue doing business until the strike has ended.

Often times, workers **picket** while they strike. In a picket line, workers patrol their workplace, carrying signs that explain their complaints, and often shouting slogans. When picketing is effective, it brings enough negative attention to the employer that customers take their business elsewhere, rather than deal with a picket line. Workers who take the jobs of strikers are known as **scabs.**

In a **boycott**, union members stop using or buying an employer's product. They also encourage customers to join the boycott. When a boycott is effective, the employer loses enough sales that it cannot afford to continue operating until the boycott is over.

2.44 MATCHING

Match-ismo. Match the letter of each term in the left column to a description in the column on the right.

a. craft union
b. industrial union
c. collective bargaining
d. strike
e. market power
f. picket
g. boycott
h. public employees' union

1. _____ a group of laborers who work in the same industry
2. _____ the process by which labor unions negotiate with employers
3. _____ a union strategy in which workers patrol their workplace with signs
4. _____ a group of workers who share a common skill
5. _____ a union strategy in which workers stop working
6. _____ a group of government employees
7. _____ an effort to discourage people from buying a particular product or from buying from a particular firm
8. _____ what a union hopes to gain for its members

2.45 IN BRIEF

Words, words, words... Write a brief response to each of the following questions.

1. The Hemet Teachers' Association (HTA) is a union of public school teachers in Hemet, CA. What type of union does the HTA exemplify?

   _____

2. The American Medical Association (AMA) is a union of medical professionals from across the U.S. What type of labor union does the AMA exemplify?

   _____

3. An autoworkers' union can include welders, painters, and other assembly line workers. What type of labor union is an autoworkers' union?

   _____

Property Rights…….....

Public versus Private Goods

Public goods are those owned by the public. Once produced, public goods are available to everyone, regardless of who has paid for their production. Some examples of public goods include national security, the postal service, and breathable air.

The **Tragedy of the Commons** is a parable that illustrates the problem of **free riders**, or people who abuse public goods without helping to pay for them. In the parable, the Boston Commons (a large piece of grazing land which does not belong to anyone specifically) are open to the public. People bring their livestock to the Commons to graze. As long as everyone is willing to use the Commons in moderation, there is plenty of grass for everyone to feed their animals. When one person brings additional animals, others follow suit. Soon, there is no grass left for anyone. The "tragedy" is that rational people will not fairly allocate scarce, publicly-held resources. A regulatory authority, such as the government, can help to prevent the abuse of public goods.

Private goods are those held by private groups or individuals. The owners of private goods have the sole authority to allow or deny anyone access to them.

Property Rights

Private goods are only valuable if private **property rights** are clearly defined and well enforced. Property rights are one of the essential institutions of a market economy. If people believe their private property will be protected, then they will make economic decisions with the goal of improving their private property or accumulating more of it.

In the U.S., private property rights are protected by the Constitution. A person cannot be deprived of private property without **due process** of law; in other words, a person cannot lose his private property unless the legal system can justify taking it away.

The U.S. system specifically protects certain forms of private property. The **copyright** system protects the creators of "original works of authorship," such as music and literature. The **trademark** system protects the owners of unique commercial marks or symbols. The **patent** system protects those who produce original inventions, as well as those who make original improvements to existing inventions. Patents last for 17 years.

An Excerpt from the Fifth Amendment
"No person shall… be deprived of life, liberty, or property without due process of law."

2.46 CATEGORIZATION

Go public. Indicate whether each good or service below is typically a public good or private one (in the U.S.). Circle your answer choices.

Ex.	economics workbooks:	public	(private)
1.	national parks:	public	private
2.	petroleum reserves:	public	private
3.	postal service:	public	private
4.	electricity:	public	private
5.	trash collection	public	private

2.47 IN BRIEF

Make a long story short. Write a brief response to each of the following questions.

1. How do property rights affect economic decision-making in a market economy?

   _____

   _____

2. Which Constitutional amendment provides for the protection of private property rights?

   _____

3. In the *Tragedy of the Commons*, what is the "tragedy"?

   _____

   _____

4. What do patents, copyrights, and trademarks have in common?

   _____

2.48 TRUE OR FALSE

True Lies. For true statements, circle "T." For false statements, circle "F" and corrected as needed.

1. T F Free riders are people who use private goods without helping to pay for them.
2. T F Original works of authorship, such as music and literature, are protected by the patent system.
3. T F Improvements to existing technology are protected by the patent system.
4. T F A regulatory authority is necessary to discourage free riders.
5. T F According to the Fifth Amendment, a person can be denied private property, even if the legal system can't justify taking it away.

Categories of Income…….....

People earn income by selling resources. People are paid **wages** in return for labor. In this context, "wages" refer to hourly wages, salary payments, and tips. People earn **rent** in return for the use of natural resources and **interest** in return for the use or sale of capital resources. Entrepreneurs are rewarded with **profit**. Income varies with the value of the resources, goods, or services people sell. Wages vary with a laborer's level of skill and ability, as well as the market value of the final good or service produced.

2.49 CATEGORIZATION

Incoming! For each scenario below, indicate which kind of income is earned from the resources sold. Use "R" for rent, "W" for wages, "I" for interest, and "P" for profit. The first has been completed for you.

R = Rent W = Wages I = Interest P = Profit

Ex. __P__ Inspired by a jaywalking ticket, two graduating high school seniors start a new company. With a limited staff, the company produces resources to help students prepare for a prestigious scholastic competition. What kind of income do the founders earn?

1. _____ When Hal learns a popular bar is for sale, he meets the owner to discuss buying it. The owner refuses to budge on his sale price, insisting the parking lot outside the bar is in a "historic location." In Hal's words, the owner is "a weasel." Hal agrees to buy the bar, but refuses to buy the parking lot. Instead, he signs a three-year lease for the parking lot; Hal pays $1000 per month for using it. What kind of income does the "weasel" collect from the lease?

   _____ Hal's bar has a rough first year. Hoping to attract new clientele, he converts it to a "gentlemen's club." When it reopens, Heidi, a lazy cocktail waitress finds it more difficult to earn tips than before. Desperate for cash, she convinces Hal to let her dance in the club under the stage name, "Chloe." What kind of income does "Chloe" earn in the club?

   _____ What kind of income does Hal earn?

2. _____ Jason is an eight-year-old who is unhappy with his weekly allowance. One warm summer afternoon, Jason's grandmother whips up a batch of her famous lemonade recipe. Afterward, when she dozes off in her recliner, Jason digs through her garage until he finds a card table and an old chalkboard. On the chalkboard, he writes, "Jason's Famous Lemonade, 25 cents." He grabs the lemonade pitcher and heads out to the sidewalk to set up a successful lemonade stand. What kind of income does Jason earn?

   _____ When Jason's grandmother awakes from her nap, she discovers the lemonade stand. Rather than scold her grandson for pirating her recipe, she seizes an opportunity. At the end of Jason's first day of business, she hands him an itemized bill for the use of her "equipment." With a heavy heart, Jason hands over 12 quarters. What kind of income does Jason's grandmother earn?

2.50 IN BRIEF

Say it simply. Write a brief response to each of the following questions.

1. In general, what causes income to vary?

   _____

2. In economics terminology, what constitutes a "wage"?

   _____

3. In general, what cause wages to vary?

   _____

   _____

Factor Markets…….....

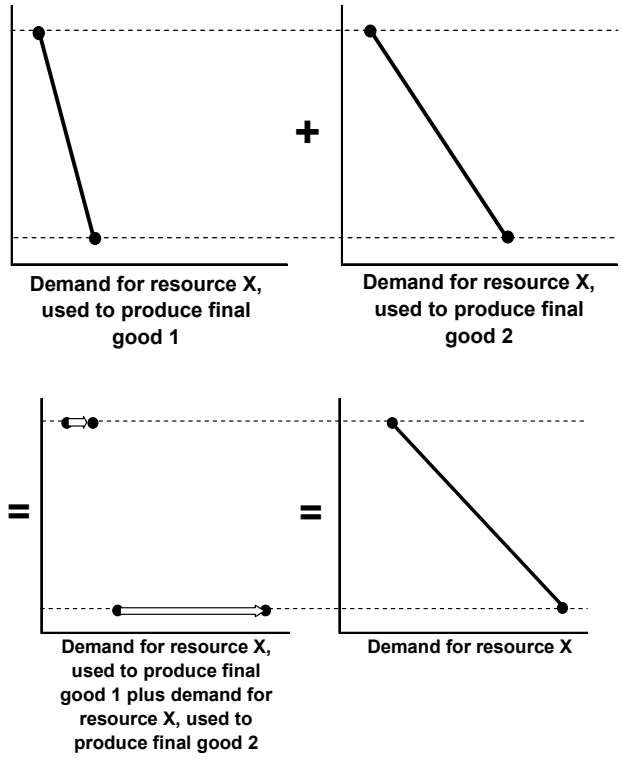
The factors of production are bought and sold in **factor markets**. Every natural resource, capital resource, entrepreneurial resource, and labor resource is sold in a factor market. Firms demand the factors of production; households (or private owners who live in households) supply them.

The demand for any factor of production is described as **derived demand**. The demand for a resource is derived from the demand for the final goods and services for which it will be used. To determine the demand for any resource, we simply add together the demands for every final good in which that resource is used.

Just as the quantity demanded of any good or service is inversely related to its price, the quantity demanded of any resource is also inversely related to its price. The demand curve for any factor of production is downward-sloping. Similarly, the quantity supplied of any resource is positively related to its price, so the supply curve in any factor market is upward-sloping—just like the supply curve for any single good or service.

Derived Demand for a Factor of Production

(an oversimplified demonstration)



2.51 APPLYING KEY CONCEPTS

In demand. In this exercise, you'll derive the demand for lumber from the demand for several uses of lumber. Use the data in the table below to answer the questions that follow.

Demand for Lumber used for Pencils

Price	Quantity Demanded
$2	3
$10	1

Demand for Lumber used for Firewood

Price	Quantity Demanded
$2	4
$10	1

Demand for Lumber used for Furniture

Price	Quantity Demanded
$2	3
$10	1

Demand for Lumber used for Houses

Price	Quantity Demanded
$2	5
$10	3

1. Add together the quantity demanded of lumber at the price of $2 for each final good. At this price, what is the total quantity demanded of lumber?

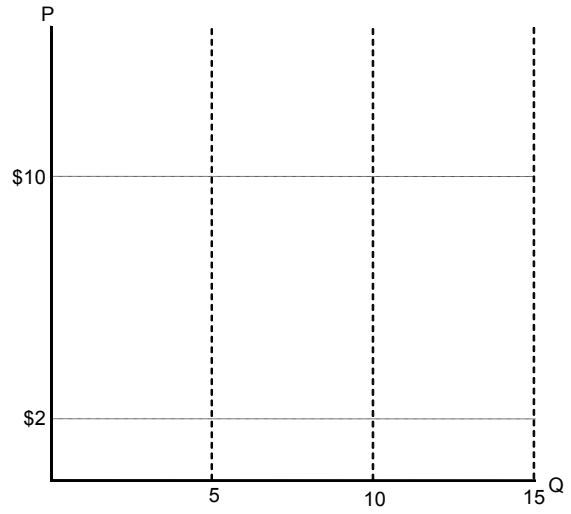
   _____

2. Add together the quantity demanded of lumber at the price of $10 for each final good. At this price, what is the total quantity demanded of lumber?

   _____

3. On the graph below, plot the price and quantity demanded data for the total demand for lumber. Connect the dots to form a demand curve.

Derived Demand for Lumber



2.52 IN BRIEF

Boxers or briefs? Write a brief response to each of the following questions.

1. What is a factor market?

   _____

2. In a factor market, who demands the resource? Who supplies it?

   _____

   _____

3. Why is the demand for a factor of production said to be "derived" demand?

   _____

   _____

The Labor Market…….....

The **labor market** is one example of a factor market. The demand for labor is derived from the demand for every good and service produced by labor. Firms demand labor and households supply laborers who perform labor. In any particular labor market, the exchange quantity is the number of **labor hours** hired. The "price" is the **wage rate**, or the amount paid to a laborer in exchange for one labor hour.

The **nominal wage rate** is the actual dollar amount paid to laborers. In order to compare the wage rate in one time period with that of another, we can factor inflation out of the nominal wage. The **real wage rate** is the wage rate after the effect of inflation has been removed. The real wage is equal to the nominal wage divided by the price level (the average of all prices in an economy).

$$\text{real wage rate} = \frac{\text{nominal wage rate}}{\text{price level}}$$

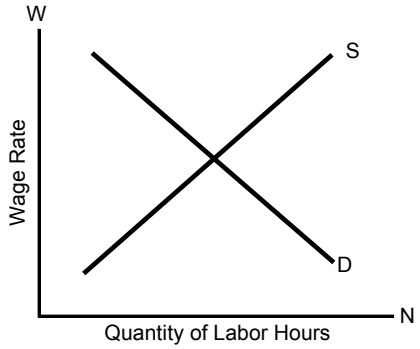
The **labor supply curve** is upward-sloping because more laborers are willing to work for a higher wage than for a lower wage. The **labor demand curve** for any kind of labor is downward-sloping for a few reasons.

First, any firm understands that, as more labor hours are hired, the productivity of each additional hour will diminish. So firms hire in response to the **diminishing marginal productivity of labor**.

Second, as the wage rate increases, firms will substitute different laborers or less-expensive laborers, rather than pay the high wage to more laborers. This is called the **substitution effect**.

The final reason is the **scale effect**: a firm can only charge so much for its product before it will price itself out of the market. The wage paid to laborers is limited by the price for which their final goods and services sell.

The Labor Market



2.53 MATCHING

Take a shot at playing Cupid. Pun intended, I'm afraid. Match the letter of each term in the column on the left to a description in the column on the right.

a. factor market
b. firms
c. households
d. derived
e. diminishing marginal productivity of labor
f. substitution effect
g. scale effect
h. downward-sloping
i. upward-sloping
j. real wage

1. _____ the shape of the demand curve in a factor market
2. _____ the effect on the demand curve when firms hire less-expensive labor rather than pay a high wage to more laborers
3. _____ the suppliers of the factors of production
4. _____ the shape of the supply curve in a factor market
5. _____ the result of the limited ability of firms to raise their prices in order to pay a higher wage rate
6. _____ the mechanism through which resources are bought and sold
7. _____ the demanders of the factors of production
8. _____ the nature of the demand for a factor of production
9. _____ the reason firms are only willing to employ a certain maximum quantity of labor hours
10. _____ the wage rate, adjusted for inflation

2.54 KEY TERMS

Term-ite. Write a brief definition of the "wage rate."

_____

2.55 IN BRIEF

Keep it simple. Briefly respond to each question below.

1. Who supplies labor to the labor market? Who demands it?

   _____

   _____

2. What is the "price" in the labor market?

   _____

3. What is the unit of measure for the quantity supplied and demanded?

   _____

4. Why does the marginal productivity of labor diminish as more labor hours are hired?

   _____

   _____

5. List three reasons why the labor demand curve is downward-sloping:

   _____

   _____

Human Capital Development and Labor Productivity…….....

Productivity is a measure of the efficiency of the production process, of how much each input to the process is contributing to the output of the process. Productivity is expressed as a quantity of units of output per unit of input. It is determined as follows:

$$\text{productivity of input X} = \frac{\text{total units produced}}{\text{total units of X used in production}}$$

$$= \frac{\text{units of output}}{\text{unit of X}}$$

Labor productivity is a measure of output per unit of labor. A "unit" is typically a labor hour, but it can also be an employee or some other measure. Labor is the input most commonly measured for efficiency.

A firm can improve labor productivity by investing in **physical capital**, so as to better-equip workers to perform their job duties. Also, a firm can improve labor productivity by investing in **human capital**; workers are more efficient when they are more knowledgeable of their job duties and better-trained to perform them.

2.56 CASE STUDY

All in a day's work. Read each scenario below and answer the questions that follow.

1. Jim and Bob are painters. If they can work together for three hours, they can paint four bedrooms. Determine their labor productivity in terms of bedrooms per labor hour:

2. Dr. Phillips is a tenured sociology professor who is not yet comfortable with what he calls "Digital Video Disc" technology[7]. He teaches six sections of one very popular class. Throughout the week, he shows clips from several films in each class section. To manage his enormous VHS library, Dr. Phillips uses university funds to employ Stan and Steve, his so-called "graduate teaching assistants." Neither Stan nor Steve has ever taught a thing to any of Dr. Phillips' students. However, they have both spent several hours in his office, rewinding outdated VHS cassettes to prepare them for use in Dr. Phillips' classes. Working together with two VCRs apiece, Stan and Steve can prepare 64 cassettes in an hour.

   Determine their productivity in terms of cassettes per VCR hour:

   Determine their labor productivity in terms of cassettes per "teaching" hour:

3. Samuel is the stay-at-home father of two-year-old twins, Ryan and MacKenzie. At 3 p.m. each afternoon, Samuel puts Ryan and MacKenzie down for a nap. He then spends every second of the next two hours picking up toys and cleaning the house before his wife returns home from work. In two hours, Samuel can pick up 118 toys and return them to their proper shelves.

   Determine Samuel's labor productivity in terms of toys picked up per father-hour:

2.57 IN BRIEF

Boxers or briefs? Briefly respond to each question below.

1. Why do we measure productivity?

   _____

   _____

2. What is the most commonly-used measure of productivity?

   _____

3. Name two ways in which a firm can improve labor productivity:

   _____

Education and Other Factors that Influence Income…….....

Returns on Investment in Education

Workers can invest in their own human capital by investing in **education**. Of all the factors that influence income, education has the most predictable results. In general, those who are educated make more money in their lifetimes than those who are not. Of course, there are exceptions. Some people make wise investments early in life and earn a fortune without ever attending a day of college; some people drop out of Harvard to become Hollywood stars[8]. Even so, an average person with a college education earns more per year than the average person with a high school education.

[7] Dr. Phillips's character was inspired by the professor of a class I am currently taking. Although I think he's a wonderful educator, he seems to have trouble with life's little obstacles, such as inserting discs in DVD players, or ironing all those pastel-colored polo shirts he wears. -Jessica

[8] Others drop out of Harvard to go to… well, Stanford… and then back to Harvard to live in a basement... and then to Korea, to live in a shopping mall. It's a wonderful life. – Jessica

Although we know that the better-educated are generally better-paid, we are uncertain why it is so. Some economists suggest that education increases labor productivity; that is certainly true in some occupations. Other economists describe higher education as a **price signal** or a **screening device.** By that, economists mean that employers tend to assume that applicants who have completed a college degree must already have the most desirable qualities of a new employee; if an applicant could get through college, she must already have the ability to follow instructions, to be punctual, or to meet to deadlines. The more elite the college, the more pre-screened the potential employee.

Other Factors that Influence Income

Education is not the sole predictor of lifetime earnings. In some **regions** of the U.S., people make more money than in other regions. **Household type** also influences income. While married-couple households earn the highest household income, women who live alone earn the least income of any household type. Naturally, different **job types** earn different incomes, too. For instance, some jobs outside of the manufacturing industry pay quite well, while others, such as those in the tourism industry, tend to pay less than the average manufacturing industry job. **Race** and **gender** are also correlated to income earnings, although it would be inaccurate to say that race or gender "causes" lower income earnings. On average, the women of any race earn less than the men of the same race. White women earn less per year than black men but more than black women. Hispanic men earn more than Hispanic women but less than black women.

The **Equal Pay Act** was aimed at closing the income gaps between races and genders. The act was passed in 1963, but four decades later, the gaps have changed little. To some extent, the different earnings are probably due to lingering discrimination; some of the earnings difference is probably attributable to less malignant factors. For example, many women spend some time out of the work force during their childbearing years, and when they return to the work force, they are "behind" men of the same age who did not take time off.

It's been a while since USAD tested these details, but it's good to understand the general contrasts between groups.

2.58 TRUE OR FALSE

"If it's true, does it matter who said it?" Determine whether each statement below is true or false. For true statements, circle "T." For false statements, circle "F" and add any necessary corrections to make them true.

Ex:	T	(F)	Athena ~~Britney Spears~~ is a goddess.
1.	T	F	As a worker's education increases, his lifetime earnings tend to increase, too.
2.	T	F	Gender has the most predictable effect on lifetime earnings.
3.	T	F	People who are well-educated tend to be well-paid because education improves labor productivity.
4.	T	F	Males who live alone have the lowest average income of any household type.
5.	T	F	On average, white women, black women, and Hispanic women each earn less than the men of their same race.
6.	T	F	By region, the lowest median household income in the U.S. is found in the Northeast.
7.	T	F	Workers who invest in their education are investing in their own physical capital.
8.	T	F	On average, those who have completed four years of college earn more per year than those who have only finished high school.

2.59 CATEGORIZATION

In the money. In each problem below, circle the group that has the higher average annual income in the U.S.

	Group A	*Group B*
Ex:	college students	(college professors)
1.	men	women
2.	white men	white women
3.	black men	black women
4.	Hispanic men	Hispanic women
5.	black men	white men
6.	Hispanic men	black men
7.	black women	Hispanic women
8.	white women	Hispanic women
9.	black women	white women
10.	black men	white women
11.	Hispanic men	black women
12.	Hispanic women	white men
13.	Hispanic men	white men
14.	Hispanic men	black men
15.	married-couple households	single-father households
16.	married-couple households	single-mother households
17.	single-father households	single-mother households
18.	males living alone	single-father households
19.	females living alone	single-mother households
20.	females living alone	males living alone

2.60 LISTING

Fundamenta-list. List six factors that can influence income:

_____ _____

_____ _____

_____ _____

2.61 IN BRIEF

I have run out of witticisms for these headings. A long time ago. Briefly respond to each question below.

1. Why do some economists suggest that employers use higher education as a screening device?

   _____

   _____

2. Has the Equal Pay Act of 1963 been effective? Why or why not?

   _____

   _____

   _____

III. Macroeconomics

This workbook section covers all of section III of the curriculum outline.

The Circular Flow, GDP, and National Income…….....

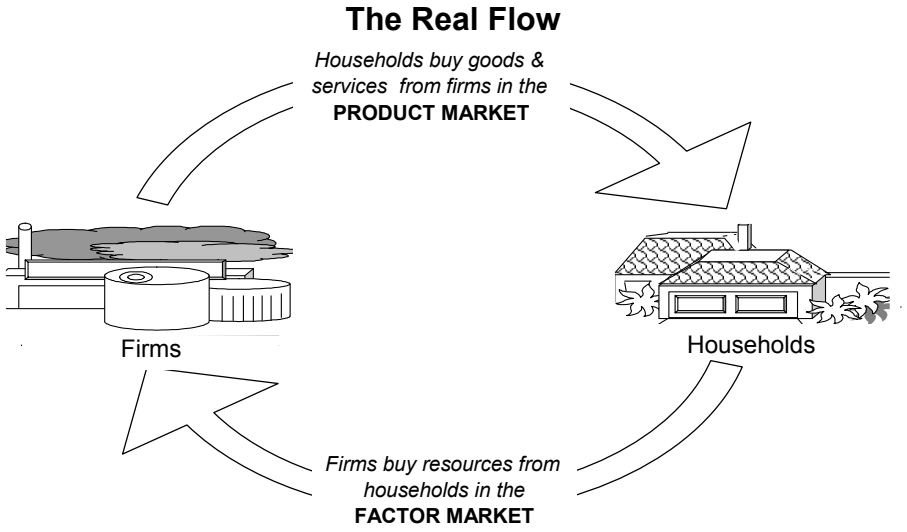
Gross Domestic Product is one of the most talked-about economic measurements. Typically, it is quoted as a measure of the *health* of an economy, but it is actually only a measure of the *size* of the economy.

We can measure GDP in a few ways. Perhaps the most intuitive way to understand GDP measurement is to relate it to the circular flow model of the economy:

Elements of the Circular Flow of the Economy

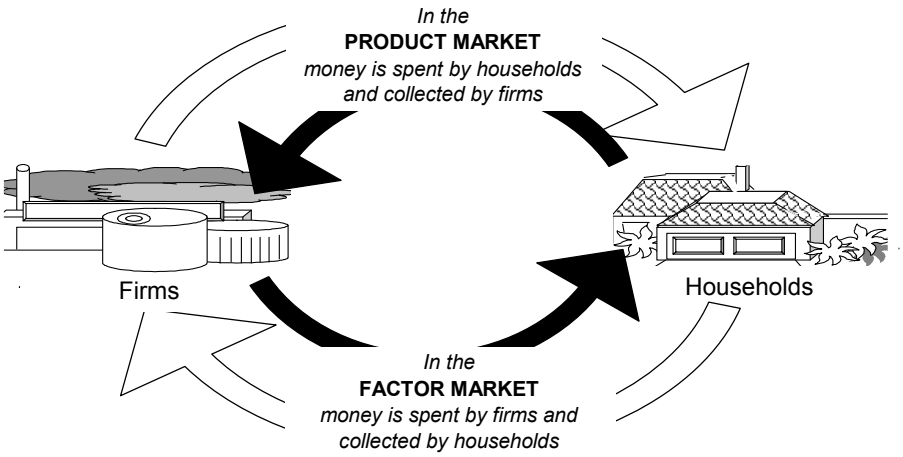
We can divide the economy into three sectors. In this workbook, we'll begin by discussing two of them. The **household** sector consists of private individuals (or families, etc.) who live in households. The household sector **consumes** goods and services. The **business** sector is comprised of firms. Firms **produce** goods and services.

In the **product market**, firms produce goods and services and sell them to households. To produce those goods and services, firms buy resources (such as labor) from households in the **factor market**. Together, these two markets comprise the **real flow**, or the circular flow of resources, goods, and services.



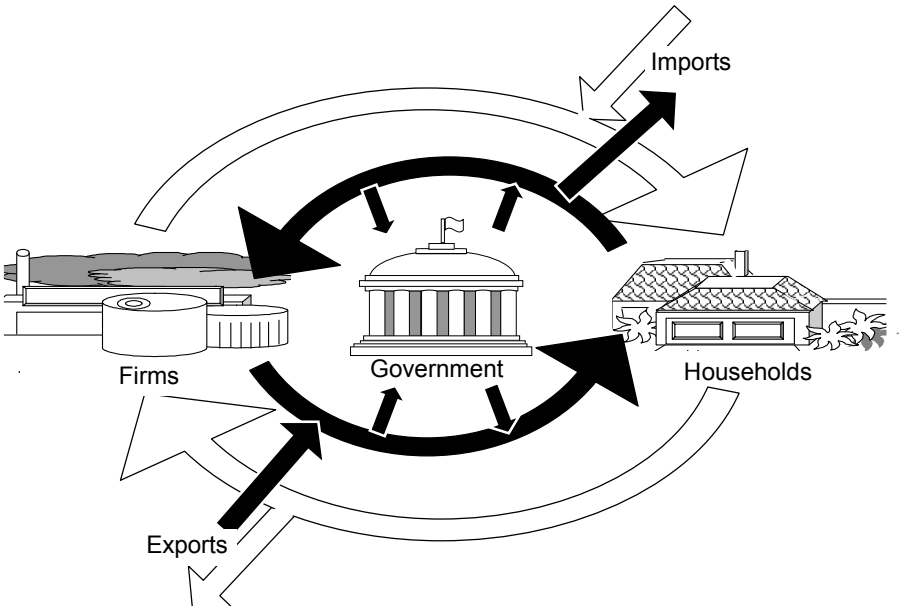
In the product market, households spend money on the goods and services they buy from firms. In the factor market, firms spend money on the resources they buy from households. Together, the two markets comprise the **money flow**, which is the circular flow of money through households and firms in an economy. The money flow moves in the opposite direction of the real flow. Firms' money payments for resources are called **resource payments**; households' payments for goods and services are called **revenue**.

The Real Flow and the Money Flow



The portion of the money flow that passes through the product market is the total spent on goods and services. The portion that passes through the factor market is the total income that households collect.

The Circular Flow Model of the Economy



The third sector of the economy is the **government** sector. The government does not have a clear-cut role in consumption or production, so we place it inside the circular flow model. The main economic activities of the government sector include **regulation** and **taxation**. When we add government to the circular flow, the circle becomes a veritable web. The government sector collects taxes and redistributes the funds around the circle. It also establishes regulations to limit or encourage production or consumption.

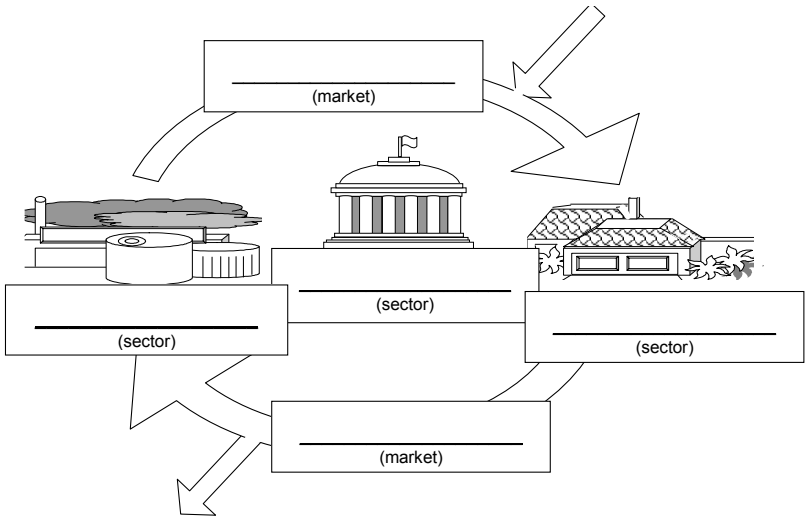
International trade further complicates the flow. When we **import** goods from other countries, the goods enter the real flow but money leaves the money flow. In economics jargon, the money spent on an import is a **leakage**. Similarly, when we **export** goods to other countries, there is an **injection** into the money flow.

Traditionally, it has been said that the circle "starts" with the household sector. In other words, demand gets things going. In this view of things, consumers drive the economy; they have **consumer sovereignty**. On the other hand, **Jean Baptiste Say** proposed that suppliers can "start" the circle—or that demand happens because supply exists. **Say's Law** holds that supply creates its own demand—that the production of goods and services results in households receiving payments from the producers for their labor, and that this income goes toward spending on the goods and services.

3.01 DIAGRAMMING

Win, lose, or draw. This simple circular flow model of the U.S. economy has been started for you. Your task is to complete it. Follow the list of instructions below.

1. Label each sector.
2. Label each market.
3. Draw arrows to represent the money flow between the sectors.
4. Draw arrows to represent the money flow to and from foreign countries.
5. Draw arrows to represent transfer payments.



3.02 IN BRIEF

Short answer. For each item below, briefly respond in the blanks provided.

1. In the circular flow model, which sector is on the demand side of the product market?

   _____

2. In the circular flow model, which sector is on the demand side of the factor market?

   _____

3. Which sector owns the resources?

   _____

4. Which sector is responsible for regulation and taxation?

   _____

5. When the real flow is clockwise in the model, in what direction does money flow?

   _____

6. Supply-side economics suggests that the circle starts in which sector?

   _____

7. What is Say's Law?

   _____

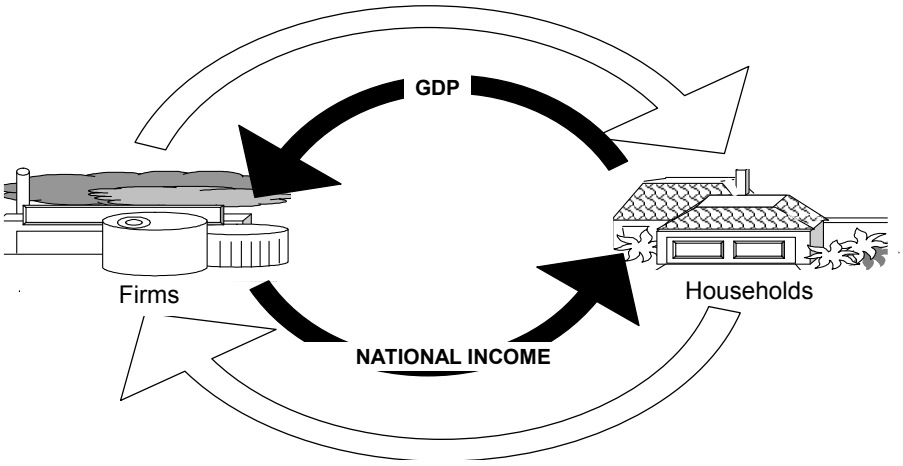
National Income and Gross Domestic Product.....

National income is the total income earned by all households and corporations in an economy within a given period of time. Since people in households own corporations, most corporate income eventually becomes household income. At this level—and in many college courses—we assume that all corporate

income becomes household income. In that case, the **payments made for factor services**, or the portion of the money flow that passes through the factor market, is equal to national income.

Gross Domestic Product, or **GDP**, is the total value of all **final goods and services** produced within an economy over a specified period of time. It is a measure of a nation's productive output. We can use the money flow to determine GDP. Final goods and services are sold in the product market, so the part of the money flow that passes through the product market is equal to GDP. In the circular flow model, we can see that national income is approximately equal to GDP; households earn national income and they spend the money they earn on aggregate output.

Income and Output in the Circular Flow Model



3.03 APPLYING KEY CONCEPTS

Where does the buck stop? Your job is to identify the final goods and services in each transaction.

1. Jake buys lemons and sugar to make lemonade for his Decathlon team. What are the final goods?

   _____

2. Stan buys lemons, sugar, and Ingredient X. He then rents a warehouse and in it, he produces Stan's Totally Incredibly Lemony Lemonade (STILL.) He bottles STILL and sells it outside the premiere of Episode VII of Star Wars. What is the final good?

   _____

3. Daniel buys clones of medal-bearing Decathletes and locks them in a basement in Cambridge for the summer. He puts them to work producing resources, workbooks, flashcards, and crossword puzzles. He sells the study aids to coaches around the country. Are the clones final goods?

   _____

   How about their labor? Is it a final service?

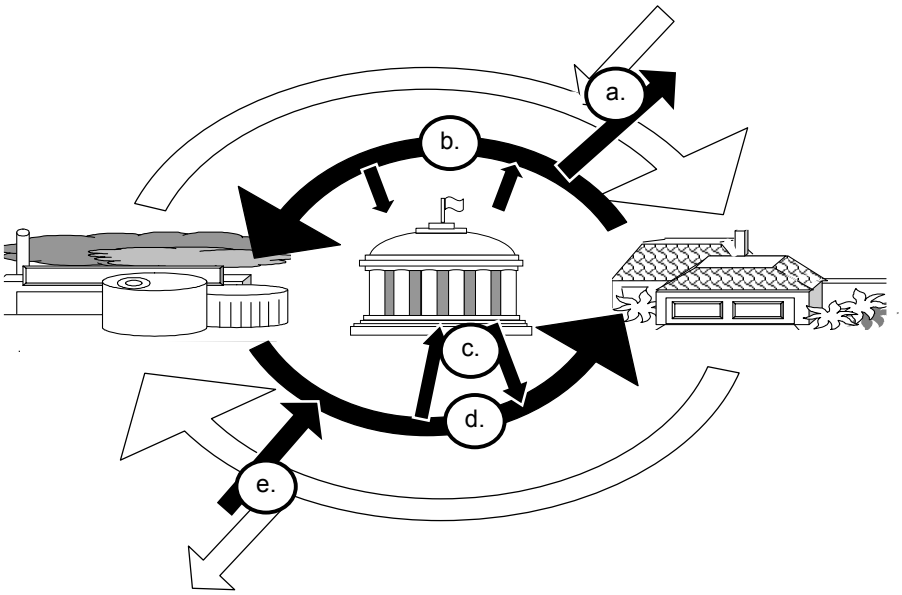
   _____

   Are the study aids final goods? How can you tell?

   _____

3.04 MATCHING

Match each letter on the circular flow diagram to a description in the list below.



1. _____ transfer payments
2. _____ imports
3. _____ exports
4. _____ GDP
5. _____ national income

Where did GNP go?.....

Gross Domestic Product (GDP) has, by and large, replaced Gross National Product (GNP) as a measure of economic output. The two measures are not quite interchangeable.

GNP measures all economic activity by the citizens of a country, even if they are doing business abroad. An American-owned shop in Paris selling soap would be generating GNP for the United States. A French businesswoman's Ramen noodles franchise in California would not be.

GDP measures all economic activity within the borders of a country, even if it is conducted with capital belonging to foreign citizens. The output of the American soap shop would count toward the GDP of France. The French businesswoman's Ramen sales would count toward the GDP of the United States.

For GDP, it doesn't matter *who owns the factors of production*. All that matters is where those factors of production earn their wages, rent, interest and profit.

3.05 CATEGORIZATION

D or N. In each row, attribute the activity to the appropriate GNP and GDP.

Activity	Counted in GNP of…	Counted in GDP of…
Example: An American-owned hamburger chain sells wacky-burgers in China.	*United States*	*China*
1. A French bank operates in New York.	_____	_____
2. An Iraqi computer company opens a location in Egypt.	_____	_____

3. An American orthodontist treats a patient from Morocco in his Seattle office. _____ _____

4. A German airline opens a wholly-owned subsidiary in Greece. _____ _____

Calculating GDP.....

We can calculate GDP in a handful of different ways. Each approach aims to avoid **double-counting**, or the inclusion of any goods or services twice in the process of measurement. Of course, no matter how you calculate it, GDP is GDP; every approach arrives at the same total. In this workbook, we'll focus on the expenditures approach.

In the **expenditures approach** to GDP measurement, GDP is calculated as **GDP = Consumption + Investment + Government Spending + (Exports Sold – Imports Bought)**. This equation is usually notated in the form of **Y = C + I + G + X**, where Y represents GDP and X represents net exports.

In the U.S., consumption accounts for about 65 percent of GDP. Investment accounts for about 15 percent and government expenditures for about 15 percent. Net exports account for the remaining five percent.

In the **income approach**, we sum up all the incomes earned in a nation in a single year, which include all wages, interest, rents and profits, and add in the value of indirect business taxes (such as sales taxes.) This results in **national income**, which is essentially the same as **net national product** (there is always a minor statistical discrepancy between them.)

Every year, some of a nation's capital stock "decays" or **depreciates** and can no longer be used in production. When the value of this depreciation is added to the net national product, the combination equals the **gross national product**, discussed earlier. Subtracting income received from other countries and adding income paid to other countries—basically, adjusting for factors of production that are owned abroad and that are owned domestically by foreigners—brings us, at last, to **GDP**.

We can also go the other way to find **disposable income**, which is **national income** minus income taxes. Disposable income is what people in society have left to spend (i.e. dispose of) after taxes.

Real GDP and Nominal GDP

We measure GDP using the current dollar values of goods and services produced. If prices increase, even when productivity has not increased, GDP will appear to have also increased. For that reason, economists differentiate between **nominal GDP**, or GDP expressed in current-year dollars, and **real GDP**, or GDP that has been adjusted for inflation. Real GDP is a more accurate measure of output than nominal GDP. The **GDP deflator** is the price index we use to convert nominal GDP to real GDP. To determine real GDP, we simply divide nominal GDP by the GDP deflator.

$$\text{Real GDP} = \frac{\text{Nominal GDP}}{\text{GDP Deflator}}$$

Problems with Measurement

A change in GDP can be misleading because we have no way of knowing for certain whether a price increase is the result of inflation or whether it actually indicates a **change of quality**. Also, some activities go **unreported**, and are not included in GDP. **Transactions without money**, such as subsistence farming and homemaking, are left out GDP, too.

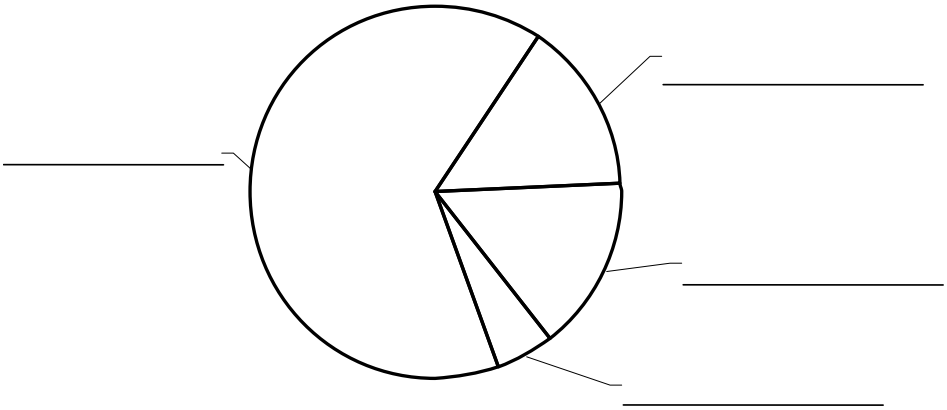
GDP as a Measure of the Quality of Life

GDP per capita is equal to total GDP divided by the total population. It is considered **a more accurate measure of the quality of life** for the people in an economy than just gross GDP. But keep in mind that GDP per capita is literally an economy's average productivity per person, which is only one aspect of the quality of life. GDP can give us an idea of the quality of life, but it does not reveal everything. GDP does not include important **non-market activities**, such as home-making. Also, **externalities** (or **spillovers**) are not accounted for by GDP. In other words, GDP counts the final goods, like new cars, but it does not count

everything that is good about an economy. And it does not count "the bads," like greenhouse gas emissions. If we compare nations solely on the basis of GDP per capita, developing nations appear to be further behind and industrialized nations, further ahead. A scale called **Purchasing Power Parity (PPP)** helps measure GDP adjusted for the lifestyle it can afford in a given country.

3.06 CHARTING

Pie, anyone? The pie chart below represents U.S. GDP. Each "piece" of the pie is one of the transaction categories we use to calculate GDP in the expenditures approach (C, I, G, or X). Begin by looking closely at each piece to estimate about what percent of the GDP pie it might represent. Next, label each piece with an appropriate transaction category and its corresponding percent of total U.S. GDP (example: "X, 55%").



3.07 FILL-IN

Fillin' out... fillin' out... Complete each statement below by filling in the missing words or phrases.

1. GDP = _____ + Investment + Government Spending + _____. This is the _____ approach to measurement.
2. In the income approach to GDP, subsidies, _____ and _____ must be subtracted from the subtotal find the national income.
3. _____ is considered a better measure of the quality of life in an economy than just GDP, though not as good GDP adjusted for Purchasing Power Parity (PPP.)
4. GDP does not account for _____ or _____.

3.08 CATEGORIZATION

One of these things is not like the other. In this exercise, you'll see groups of items that are somehow related. In each group, one item does not belong. Identify the impostors and cross them out. Then explain how the remaining three are related.

Ex: Guy Gavriel Kay
Stephen Donaldson
~~Dan Brown~~
George R. R. Martin

Explanation:
The group consists of my favorite fantasy novelists. Guy Gavriel Kay authored The Lions of Al-Rassan *and* The Sarantine Mosaic. *Stephen Donaldson authored* The Chronicles of Thomas Covenant the Unbeliever*—about a leper who finds himself in a fantasy world that may or may not be real. He recently added new, even better volumes to the saga. George Martin's* A Game of Thrones *reinvented the War of the Roses in a world where seasons last years at a time. All three write vivid, clear prose, with characters that seem to have legitimate minds of their own and plots that amuse, inspire and terrify. The exception, Dan Brown, wrote* The Da Vinci Code, *which had interesting ideas but wooden prose and flat, predictable characters.*

1. consumption
   rents
   investment
   government spending

   Explanation:

2. employee compensation
   interest
   profits
   indirect taxes

   Explanation:

3. government spending
   non-market activities
   unreported activities
   externalities

   Explanation:

4. investment
   consumption
   quality changes
   net exports

   Explanation:

5. Y
   C
   G
   X

   Explanation:

6. value-added
   income
   expenditures
   externalities

   Explanation:

7. non-market activities
   subsidies
   quality changes
   transactions without money

   Explanation:

8. raw goods
   intermediate goods
   final goods
   transfer payments

   Explanation:

3.09 IN BRIEF

Short answer. Write a brief response to each of the following questions.

1. What is "double-counting" as it pertains to GDP measurement?

   _____

2. Why is GDP per capita an inadequate measure of the quality of life?

   _____

   _____

3. How can GDP be distorted by price changes?

   _____

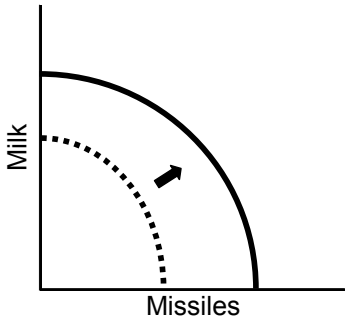
   _____

Economic Growth; Definitions: Growth, Recession, Depression…….....

By definition, **economic growth** is a sustained increased in an economy's capacity to produce goods and services. Growth is one of the most important macroeconomic goals we pursue in the U.S. To determine whether economic growth is occurring, economists usually watch for increases in Gross Domestic Product.

Because economic growth is defined as an increase in an economy's capacity to produce, we can say that a country that has experienced economic growth has seen an increase in its production possibilities. Economic growth causes the production possibilities frontier to shift outward, away from the origin.

Economic Growth



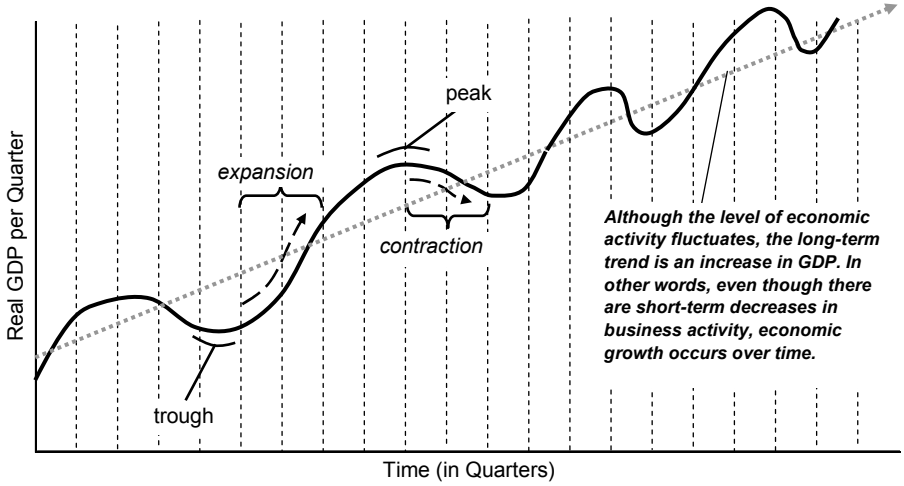
The Business Cycle

The amount of business activity that occurs within an economy will fluctuate over time. There are some periods in which productivity (and other business activity) increases for several consecutive months. There are other periods in which business activity decreases for several months. Together, these fluctuations form a cycle, which economists refer to as the **business cycle.**

The business cycle consists of periods of economic **expansion** and periods of economic **contraction**. By definition, a period of economic expansion occurs when GDP increases for at least **two consecutive quarters** (six months). When an expansionary period ends, the level of business activity is said to "**peak**." Following a peak, an **economic downturn** begins. A downturn is simply a downward change in the direction of the business cycle over time. A contraction in the cycle is called a **recession**. By definition, a recession occurs when there is a sustained decrease in GDP for at least two consecutive quarters. The end of a recession is a **trough** in the cycle. You're probably familiar with the term "**depression**;" although it's uncommon, depression can be seen in the business cycle, too. A depression is like a severe recession, but it lasts for a long time (years, rather than quarters) and it's marked by substantial unemployment.

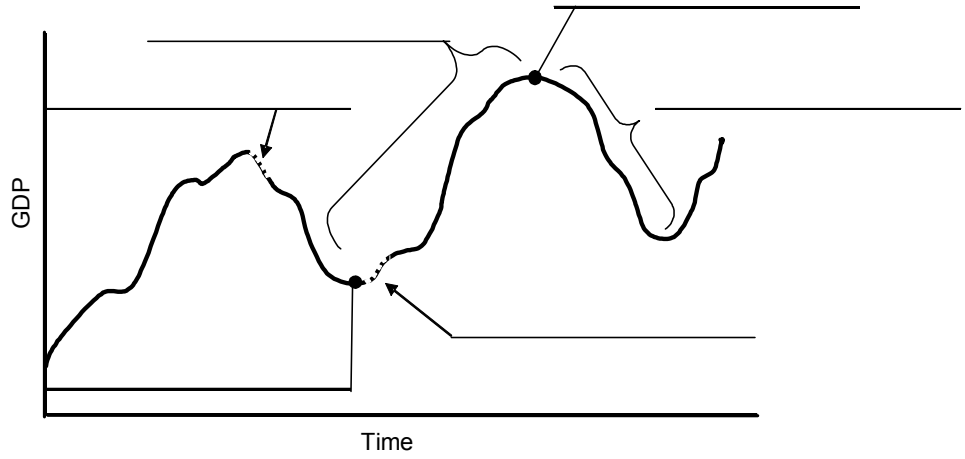
Economists do not know what causes the level of business activity to fluctuate, but they are always working to try to understand it better. Abrupt changes in the cycle can be harsh for people to endure. During expansionary periods, inflation can rise rapidly; during contractionary periods, unemployment usually increases. If we can understand the cycle, we can enact policy measures to soften its impact on people.

If we plot GDP over time, we can actually *see* the cycle; during expansionary periods, GDP increases from one month to the next; during contractionary periods, GDP decreases.



3.10 DIAGRAMMING

Name-calling. Label each part of the business cycle, below.



3.11 TRUE OR FALSE

"I want the truth!" Determine whether each statement below is true or false. For true statements, circle "T." For false statements, circle "F" and then add any necessary corrections to make them true.

1. T F A recession is a sustained decrease in business activity, lasting at least four consecutive quarters.
2. T F The business cycle results from natural fluctuations in levels of business activity.
3. T F By definition, economic growth is a sustained increase in an economy's factors of production.
4. T F To measure economic growth, economists watch for increases in Gross Domestic Product.
5. T F The end of a recession is a trough in the business cycle.

Economic Fluctuations in the Twentieth Century.....

The twentieth century began with a series of banking panics that culminated in the so-called Panic of 1907. Banks failed in large numbers, and the government was prompted to consider creating a more stable national banking system; this ultimately led to the creation of the Federal Reserve in 1913.

The economic growth sparked by American participation in World War I rolled over in the 1920s, which became known as the Roaring 20s for their economic prosperity and innovative, industrial spirit. It was a period in which Republican administrations took a largely hands-off approach to managing the economy. Banks in particular overextended themselves, and eager investors played the stock market "on margin"—that is, on borrowed funds. When the stock market crashed on Thursday, October 24, 1929, the economy collapsed almost overnight. By 1932 the Dow Jones average had fallen nearly 90%. It took 25 to recover.

This "Black Thursday" in 1929 heralded America's descent into the **Great Depression**. A **depression** is a severe contraction in economic growth. Typically, unemployment is high during a depression. The Great Depression began in 1929 and lasted for nearly four years, though it was many years more before its effects subsided. At the low point of the period, economic growth declined by nearly 15 percent in one year.

The Great Depression was probably cemented by the U.S. Congress's reflexive passage of the Smoot-Hawley Tariff Act in 1930 as a response to the stock market crash. The high tariffs triggered a trade war that only worsened the economy for countries worldwide.

Under President Franklin Roosevelt, the United States took a largely Keynesian approach to restarting the economy, investing heavily in a "New Deal" that injected government money into the economy. Real GDP began to rise again starting in 1933. Arguably, though, the economy did not truly recover until the ramping up of American involvement in World War II, which put the country on a "war footing" and demanded high employment and productivity. The annual growth in real GDP during the World II was the largest the U.S. has ever seen. When the war ended, real GDP declined again, but that recession lasted only three years.

From 1950 to 1953, during the **Korean War**, the U.S. economy expanded again. Real GDP increased from year to year. American suburbs blossomed, the interstate highway system was modernized and the myth of the American commuter family was born.

There was a brief decline in economic growth at the end of the 1950s, but then real GDP generally increased over the next decade. The 1960s are best remembered as a time of civic protest, political assassination and moral experimentation, but they were also relatively prosperous (though inflation did begin to accelerate in the final years of the decade.)

In 1971, President Nixon, concerned over inflation, imposed the first-ever peacetime price controls. These did momentarily halt inflation, but would have consequences later on. In 1973, in the aftermath of a war with Israel in the Middle East, some **members of OPEC imposed an embargo on the sale of oil to the U.S.**—effectively quadrupling the price of oil. At the time, the U.S. was already suffering from inflation, as grain prices were on the rise, mostly because of poor weather and crop failures around the world. Making things worse, Nixon's price controls were expiring, only increasing the pressure on prices to rise.

By 1974, the increased oil prices knocked the U.S. into a full-fledged recession, while rising oil and food prices had made everyday living much more expensive—with inflation rates of over 10% a year. A panicked Congress cracked down on energy consumption, and within two years, the price of oil was driven down far enough that some OPEC members had to begin producing and selling oil again.

The recession ended by 1976, but the intervening years introduced a new term to the American economy: **stagflation**, a simultaneous combination of recession (or very slow growth) and inflation. Then, in 1979, OPEC struck again, doubling the price of oil. A new wave of stagflation carried the economy into the 1980s.

By 1983, however, the economy was expanding again, and the rest of the 1980s were largely a prosperous time, with inflation hovering around 5%, unemployment low, and the markets booming. Some attribute this to President Reagan's supply-side tax cuts, others on ramped-up military spending in the arms race with the Soviet Union, and still others to the maturation of the computer revolution. Whatever the cause, the decade restored American economic optimism after the turmoil of the 1970s.

In 1990, the **Gulf War** resulted in a brief period of recession. What followed was **the longest period of expansion** the U.S. has ever seen, fueled in part by the new Internet economy but spanning nearly all economic sectors. It began in 1991 and ended about ten years later. Many of the new "dot-coms" went out of business, and the U.S. government fell back into a deficit as it cut taxes, launched a costly war in Iraq and failed to control domestic spending. In general, the first decade of the 21st century has seen diminished growth, a generally stagnant stock market, numerous lost jobs, the collapse of the real estate bubble, and a dramatic increase in the price of oil.

3.12 CATEGORIZATION

Hopefully, it's just a phase. Indicate which phase of the business cycle the U.S. was in when each event or time period happened. Circle your answer choices. The first problem has been completed for you.

1. (depression) recession expansion — The Great Depression

2. recession expansion — the years from 1933 to 1937

3.	recession expansion	World War II
4.	recession expansion	the years from 1945 to 1947
5.	recession expansion	the Korean War
6.	recession expansion	the OPEC oil embargo of 1973
7.	recession expansion	the years from 1983 to 1989
8.	recession expansion	the Gulf War
9.	recession expansion	the years from 1991 to 2001

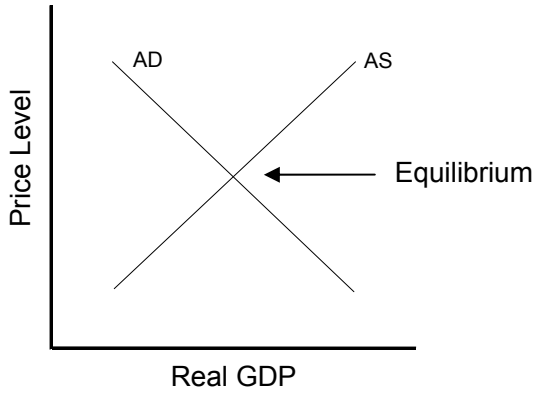
Aggregate Supply and Aggregate Demand…….....

Aggregate output is comprised of all the goods and services produced in an economy. Real GDP is a measure of aggregate output.

In the same way that a consumer demands units of individual goods and services, the demand of all consumers for all goods and services comprises the demand for aggregate output. Similar to the demand relationship you've already seen, **aggregate demand** is the relationship between the quantity demanded of aggregate output and the **price level**, or the average price of all the goods and services produced in an economy. Aggregate demand is the sum of the demands for every good and service in an economy. The **aggregate demand curve** graphically represents the relationship between the price level and the quantity demanded of real GDP.

Aggregate supply is the relationship between the price level and the quantity of real GDP that producers are willing and able to supply. This relationship is graphically represented by the **aggregate supply curve**.

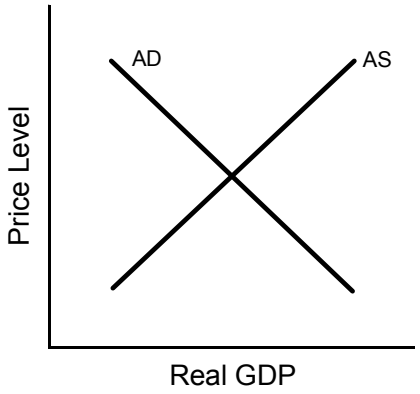
Equilibrium occurs at the point where **aggregate demand equals aggregate supply**, or the intersection of the aggregate demand curve with the aggregate supply curve. This point is the equilibrium level of real GDP and price in the economy.



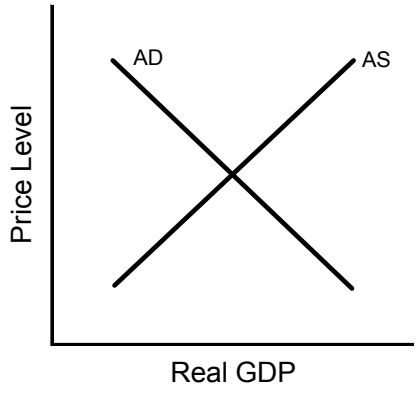
3.13 APPLYING KEY CONCEPTS

Mean curves. In this exercise, you'll see how shifts in aggregate demand and aggregate supply can cause changes in the business cycle.

1. *A recession is marked by a decrease in real GDP. One way this can happen is if aggregate demand decreases. Draw a new aggregate demand curve, reflecting the change that would cause a recession.*



2. *Stagflation is a combination of stagnation and inflation: prices are rising but real GDP is not growing. This happens when there is too little aggregate supply available to satisfy aggregate demand. Draw a new aggregate supply curve, reflecting the change that causes stagflation.*



Unemployment…….....

The **labor force** includes any person who is at least 16 years of age, who works for **pay** or **profit** either full-time or part-time. It also includes anyone who is **actively seeking** a job. By definition, an **"employed"** person has some sort of job. An **"unemployed"** person does not have a job, but is making a persistent effort to find one. If a person has no job and is not really trying to find one, then that person is simply "without a job," not "unemployed."

By definition, the labor force is comprised of the employed and the unemployed. The **labor force participation rate** (LFP) for any group (such as civilians or people of a certain gender) is the percentage of that group that is in the labor force. For example, the civilian LFP is equal to the total number of civilians who are in the labor force, divided by the total number eligible for inclusion in the labor force. The **unemployment rate** is the percentage of the labor force that is unemployed. The **employment rate** is the percentage of the labor force that is employed.

$$\text{Labor Force} = \text{Unemployed} + \text{Employed}$$

$$\text{Labor Force Participation Rate}_{(\text{group})} = \frac{\#\text{ Group Members in the Labor Force}}{\#\text{ Total Group Members}}$$

$$\text{Unemployment Rate} = \frac{\#\text{ Unemployed}}{\#\text{ in Labor Force}}$$

$$\text{Employment Rate} = \frac{\#\text{ Employed}}{\#\text{ in Labor Force}}$$

Full employment is typically defined as a condition in which 96 percent of the labor force is employed (or four percent is unemployed). Some economists think that a rate of four percent unemployment is **natural**. An economic system that is operating at its natural unemployment rate is operating at full employment. At full employment, a nation is capable of attaining its **potential GDP**.

The unemployed can be divided into four basic categories. The **frictionally unemployed** are essentially "between jobs." The **structurally unemployed** lose their jobs when structural changes, such as technological advances, cause their variety of labor to fall out of demand. For the **cyclically unemployed**, unemployment is a function of the phases of the business cycle. Finally, there are the **seasonally unemployed**, whose particular skills and abilities are only desirable during certain seasons of the year.

Underemployed workers are problematic even though they are not included in the official calculation of the unemployment rate. Underemployed people have jobs, but they are not working up to their employment potential; they are not utilizing their education or their skills in their occupations.

3.14 CATEGORIZATION

Count me in. Indicate whether each person below is in the labor force. Write "IN" for those people who are in the labor force, or "OUT" for those people who are not.

1. _____ Curt teaches AP Physics at a magnet high school. He teaches for about 30 classroom hours each week. He also spends an additional 30 hours each week grading homework assignments and tests, and preparing to give lectures. He earns a salary of $40,000 per year. Regardless of how many hours he works, Curt's salary does not change.
2. _____ Jason is a 14-year-old fry cook at a fast food restaurant. To get the job, he lied about his age. He works about 20 hours each week and he earns $7.00 per hour.
3. _____ Bridget is 21. She used to be a cocktail waitress, but quit because she believed she had "too much seniority" to work on slow nights in the bar. Now, when her parents ask her how she plans to pay bills, she says she's "trying to find a job." While it's true that her friends have seen her reading classified ads, it is also true that they have often heard her say, "I'm not gonna work there!" It's been several months since Bridget has actually considered a job.
4. _____ Connor is the manager at the bar where Bridget used to work. He is a 24-year-old Irish-American national. At the bar, his responsibilities include bartending and hiring, as well as preparing the schedule that Bridget once resented so much. Connor works about 35 hours per week. He earns a manager's salary plus any tips he makes while bartending.
5. _____ Brett is 22. He was delivering a pizza one night when he received a call, telling him that his National Guard unit was about to be sent overseas to serve in Iraq. Before Brett left, his manager at the pizza place told him he'd still have a job when he returned. After nine months away, Brett is still in Iraq.

3.15 MORE CATEGORIZATION

Got work? Indicate whether each person below is unemployed, underemployed, or not part of the labor force by writing the appropriate letter in each blank.

a. unemployed b. underemployed c. not part of the labor force

1. _____ Amos has a degree in Music performance. He waits tables in a resort hotel.
2. _____ Drew is a studio artist waiting to be discovered. That's about all he does: he waits.
3. _____ Anne has just finished her degree in Advertising. She would like to work for a large advertising firm, but has not found a job yet. In the past four weeks, she has submitted her résumé and portfolio to over 20 firms. She has already had interviews with three of them.
4. _____ Marie was once the CFO for a multinational corporation called Sandwiche's Inc. After Sandwiche's Inc. merged with Plural Freshman Corporation, Marie found herself wealthy and without a job. She is now sunning on a private island near Sri Lanka.
5. _____ Craig once zipped through his actuarial exams in record time, becoming one of the nation's top actuaries by age 25. Now he zips through a parking lot, delivering hamburgers on roller blades.
6. _____ Joe says he doesn't work because his wife, Suzanne, is better at it than he. He does not cook nor clean because he thinks she does that better, too. He divides his time between a local café, where he plays board games with pseudo-intellectuals, and a tanning salon, where he works on "his color" and flirts with the employees.

3.16 FILL-IN

Because filling in is better than filling out. Complete each formula below by filling in the blanks.

1. Labor Force = _____ + _____
2. Unemployment Rate = _____
3. Female Labor Force Participation Rate = _____

3.17 APPLYING KEY CONCEPTS

Number crunch. In each problem below, you'll see a set of fictitious data. Use the data to calculate various economic measurements.

1. Country: **Decalon**
   Total population: **100,000**
   Total population over age 16: **65,000**
   Employed men: **30,000**
   Employed women: **20,000**
   Unemployed men: **5,000**
   Unemployed women: **5,000**
   People without jobs who are over age 16: **5,000**

   a. Number of people in the labor force:

   b. Number of employed people:

   c. Number of unemployed people:

   d. Unemployment rate:

   e. Employment rate:

   f. Female labor force participation rate:

2. Country: **Demilon**
   Total population: **50,000**
   Total population over age 16: **32,000**
   Employed men: **10,000**
   Employed women: **18,000**
   Unemployed men: **1,500**
   Unemployed women: **500**
   People without jobs who are over age 16: **2,000**

   a. Number of people in the labor force:

   b. Number of employed people:

c. Number of unemployed people:

d. Unemployment rate:

e. Employment rate:

f. Male labor force participation rate:

3.18 CATEGORIZATION

Unemployment Anonymous. In this exercise, you'll meet laborers who are out of work. Read each laborer's story, and then identify his/her category of unemployment. For each laborer, write "frictional," "seasonal," "cyclical," or "structural," as appropriate.

1. Meet Juan, formerly a rotary telephone repairman. Now that everything is going cellular—or for that matter, digital—Juan's skills are obsolete. When he's not out looking for a job, he spends his days folding comic strips into finger puppets.

   Juan's type of unemployment is _____.

2. Elisa had a great job as an accountant in a global firm. Then there was the Incident. Suffice it to say that Elisa jammed a paper shredder; the following day, she handed in her resignation. New job offers are pouring in, but Elisa is trying to hold out for "the one." When she finds it, she'll go back to work.

   Elisa's type of unemployment is _____.

3. Megan was a model of designer Swiss watches (she's got some good-looking wrists). When the stock market crashed, everyone who could afford those watches stopped buying them. Her boss has told her that as soon as sales pick up again, she can come back to work.

   Megan's type of unemployment is _____.

4. Steve was a server in a coffee shop in a tourist hotspot in the southwest. When the tourism industry took a dive, the coffee shop was forced to cut its personnel in half. Steve was let go. He loved the regulars at his old job. Every morning, he practices pouring coffee without dripping on the table, hoping he'll be hired again soon.

   Steve thinks his type of unemployment is _____.

5. Meet Bruce, former owner of Bookworm Bungalow, a used book store. When the Plague of Apathy swept through the young people in his town, they all stopped reading. Now they're ignorant, illiterate and happy, and Bruce has had to close his shop. He is uncertain of what the future holds. He's been applying for jobs and he's had a few interviews, but no one will hire him. Books are all he knows.

   Bruce's type of unemployment is _____.

6. Kyle is a ski instructor in Flagstaff, Arizona. Normally, Flagstaff is one of the ten "snowiest" cities in the U.S. This year, however, there have been fewer than three inches of precipitation. Flagstaff tourism has taken a dive. Kyle is accustomed to being unemployed in the summer, but not to living on welfare, too.

   Kyle's unemployment is _____.

Problems with Measuring Unemployment.....

Like most economic measures, the unemployment rate is not perfect. It has the potential to **overstate the problem** of unemployment. One reason is the **effect of unemployment compensation**. On average, those who receive unemployment compensation remain unemployed for eight weeks longer than those who do not collect the same benefits. Unemployment compensation apparently reduces their incentive for finding a job.

Another reason is that **teenagers are included in the unemployment rate**. The majority of unemployed teenagers do not seek a job to contribute to family income, but rather, to earn income for "extras." However, as many as 40 percent of employed teenagers *do* contribute to their family income, so there is a strong argument that teenagers should be included in the calculation of the unemployment rate.

Dual-income families are problematic, too. While one spouse is employed, the other is more likely to take longer to search for a job than would a single person. As long as that unemployed spouse remains unemployed, he/she adds to the unemployment rate.

Finally, **new college graduates have unrealistic income expectations,** which may cause them to remain unemployed longer than a person with more realistic expectations. When recent graduates hold out for a higher starting salary, they inflate the unemployment rate.

The unemployment rate can also **understate the problem** of unemployment. The **partially employed** are one reason. These individuals would prefer to work full-time, but because they cannot find a full-time job, they settle for part-time work instead. By definition, the partially employed are not part of the unemployment rate. **Underemployment** is another reason. Because the underemployed have jobs, the unemployment rate doesn't include them in measuring the problem of unemployment. But they are a problem. They have education, knowledge, skills, and/or experience, and they are not working up to potential. Finally, there are **discouraged workers** (also called **marginally attached workers**). These people do not have jobs and they are not seeking jobs, either, because they believe they will not find them. By definition, they cannot be included in the unemployment rate because they are not actively seeking jobs. Nonetheless, they are capable of working and they would like to be working. The unemployment rate will not include them in its measurement of the unemployment problem, but without a doubt, discouraged persons have personal unemployment problems of their own.

3.19 SENTENCE COMPLETION

You tell me. In each pair of possible sentence completions, circle the word that BEST completes each statement, below.

1. A recent college graduate—who has been actively seeking a job—turns down a job offer, believing she should be earning a higher starting salary. She is causing the unemployment rate to [OVERSTATE, UNDERSTATE] the problem of unemployment.
2. If a person gives up on finding a full-time job and settles for part-time work, he causes the unemployment rate to [OVERSTATE, UNDERSTATE] the problem of unemployment.
3. If a skilled, educated person accepts a job that requires unskilled labor, she causes the unemployment rate to [OVERSTATE, UNDERSTATE] the problem of unemployment.
4. The unemployment rate can [OVERSTATE, UNDERSTATE] the unemployment problem because it [DOES, DOES NOT] account for the joblessness of discouraged persons.
5. Unemployed teenagers who are seeking a job in order to earn income for "extras" cause the unemployment rate to [OVERSTATE, UNDERSTATE] the problem of unemployment.
6. In a dual-income couple, one unemployed spouse may take his time as he searches for a new job. He causes the unemployment rate to [OVERSTATE, UNDERSTATE] the problem of unemployment.

The Bureau of Labor Statistics.....

The **Bureau of Labor Statistics (BLS)** is an agency of the **U.S. Department of Labor.** Each month, the BLS conducts a **Current Population Survey** to gather current data about unemployment. Working from the survey results, the BLS determines the current size of the labor force and the current rate of unemployment (and other statistics, too). New BLS statistics are published on-line each month. You can see them for yourself if you visit the BLS website at www.bls.gov.

The BLS does not attempt to prepare statistics on underemployment in the U.S. (Remember that underemployment describes a situation in which people are working jobs less-demanding than those for which they are qualified.) In the words of the Bureau, "Even if many or most could be identified, it would still be difficult to quantify the loss to the economy of such underemployment."

Unemployment Statistics

In June 2008, the **civilian labor force** was comprised of about 153 million people. The **civilian labor force participation rate** was about 66 percent. There were about 8.5 million **unemployed** people—1.5 million more than a year earlier—and the **unemployment rate** hovered around 5.5 percent.

-Adapted from www.bls.gov

3.20 LISTING

Idea-list. Complete each list below.

1. List four kinds of unemployment.

   a.

   b.

   c.

   d.

2. List three reasons why the unemployment rate may understate the problem of unemployment.

   a.

   b.

   c.

3. List four reasons why the unemployment rate may overstate the problem of unemployment.

   a.

   b.

   c.

   d.

3.21 SENTENCE COMPLETION

More or less. Complete each statement below by circling either "more" or "less."

Example: In 2008, there were [MORE, (LESS)] Academic Decathlon teams competing than in 1994.

1. In 2008, there was [MORE, LESS] unemployment in the U.S. than in 2007.
2. In 2008, the civilian labor force in the U.S. was comprised of [MORE, LESS] than 100 million people.
3. In 2008, there are [MORE, LESS] than 8 million people who can be classified as "unemployed."

Money…….....

By definition, **money** is anything we can use to buy resources, goods, or services, or to repay debts. As you have learned, we use money in order to **trade** more easily and avoid the extreme complexity of barter. We also use it to help us **compare the relative values of goods and services**. And of course, we **borrow**, **save**, and **invest** with money. **Currency** is a common medium of exchange used as money.

Commodity money is something, such as gold, that is intrinsically valuable, but that can also be used as money. By contrast, **fiat money** is paper currency that is accepted as money because a government has declared it **legal tender**; by law, it must be accepted in payment of debts. Fiat money has no intrinsic value. It can only be used as money. Coins such as pennies or quarters are referred to as **fractional currency** because they represent a fraction of the value of the unit of currency; that is, a quarter is worth one-fourth of a U.S. dollar.

Money serves three functions. First, it serves as a **medium of exchange**. If you give money to someone, she will probably be willing to give you a resource, good or service in exchange for it. Second, money serves as a **store of value**. That is, unlike an ear of corn or a gallon of milk, money won't spoil over time. If you have a five-dollar bill today, and you choose to hold onto it for a week, then you can spend it at the end of the week and it will still be worth five dollars (assuming there has been no inflation). And finally, money functions as a **unit of account** (or a "standard of value"). We express the prices of resources, goods, and services in terms of our medium of exchange; in other words, we express prices in terms of money.

Good money must have some essential physical properties. It must be **durable**, **scarce**, and **easy to transport**. Also, it must be **divisible**, in the way that a dollar may be divided into 100 cents.

Some coins are made of precious metals, and their value is determined by their metal content. These coins are **debased** when their precious metal content is decreased by adding in non-precious metals. Debasement allows unscrupulous rulers to make more currency from the same amount of precious metal.

3.22 TRUE OR FALSE

Truth or dare. Determine whether each statement below is true or false. For true statements, circle "T." For false statements, circle "F" and then add any necessary corrections to make them true.

1. T F Silver is an example of fiat money.
2. T F Commodity money has no intrinsic value.
3. T F Anything can be money, as long as people will accept it in exchange for resources, goods, or services, or in repayment of debts.
4. T F Good money must be durable, abundant, and easy to transport.
5. T F Money functions as a medium of exchange, a store of value, and a unit of account.

3.23 CATEGORIZATION

What's your function? Indicate which function of money is described in each problem below.

Ex.: John wants a new car and he owns a painting. The car dealership doesn't want his painting. He sells his painting for money, and then spends that money on the car he wants. John didn't have to barter because he used money as a <u>medium of exchange</u>.

1. John couldn't express the value of the car he wanted in terms of paintings, nor could he express the value of the painting he had in terms of cars. But he was able to express the value of both goods in terms of money. In this sense, money functioned as a

   _____.

2. Mark bought a house for $200,000. Five years later, he sold it for $280,000. Although the house is not money, Mark used it as a

   _____.

3. Suppose we can express the value of any DemiDec product in terms of flashcards. Flashcards serve which function of money?

   _____

3.24 FILL-IN

Academic dentistry. Fill in the blanks in the sentences below.

Ex. An economics workbook would be a better form of money than a boat because a workbook is <u>easier to transport.</u>

1. A coin is a better form of money than a house because it has the essential physical property of _____.
2. Silver is a better form of money than gravel because silver has the essential physical property of _____.
3. A coin would be a better form of money than a white rose because silver has the essential physical property of _____.
4. The U.S. dollar is a good form of money, in part, because it is _____; it can survive a run through a washing machine (just like DemiDec Dan's passport.)
5. Dollar bills are a better form of money than water because they are _____.
6. A stone could be a better form of money than a rare orchid because a stone is more _____ than an orchid; but a rare orchid could be a better form of money than a stone because a rare orchid is more _____ than a stone.

Definitions of the Money Supply.....

Anything can be money, as long as people will accept it in return for resources, goods, or services, or in repayment of debts. By that definition, what one person sees as "money" may not be "money" to someone else. Of course, most of us would agree that cash can be safely called "money." But as it turns out, only 25 percent of the transactions we make every day actually involve paper currency and coins. About 70 percent of our daily transactions involve **demand deposits**—the money we keep in checking accounts. That other five percent has to come from somewhere, right? And if people are accepting something in return for goods and services, then it must be money, right?

The **money supply** is the total quantity of money in an economy. Just as there is uncertainty over how to define money, there is uncertainty over how to measure the money supply. The Federal Reserve keeps track of a few **money aggregates,** or definitions of the money supply. Each definition differs from the others according to its **liquidity**, which is the ease with which an asset can be converted into cash.

M1 is the most liquid conventional definition of the money supply. It consists of paper currency and coins, traveler's checks, and demand deposits. Demand deposits make up the majority of M1 assets.

M2 is the second-most liquid money aggregate. Many economists think it is the most useful definition of the money supply. It includes everything in M1, as well as deposits in savings accounts, money market deposit accounts, money market mutual fund shares, small certificates of deposit (CDs), overnight repurchase agreements, and overnight Eurodollars. A small-denomination CD has a value of less than $100,000.

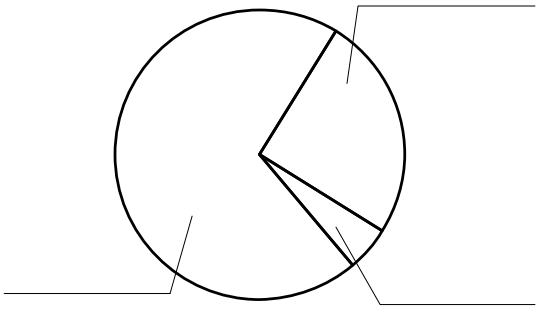
M3 includes everything in M2, as well as large-denomination CDs, long-term repurchase agreements, Eurodollars, and shares of institutional money market mutual funds. As of 2006, the Federal Reserve no longer tracks M3.

L is the broadest and **least liquid** definition of the money supply. Think of "L" as standing for *last resort*. It includes everything in M2, as well as savings bonds, government securities, commercial papers, and deeds.

3.25 CHARTING

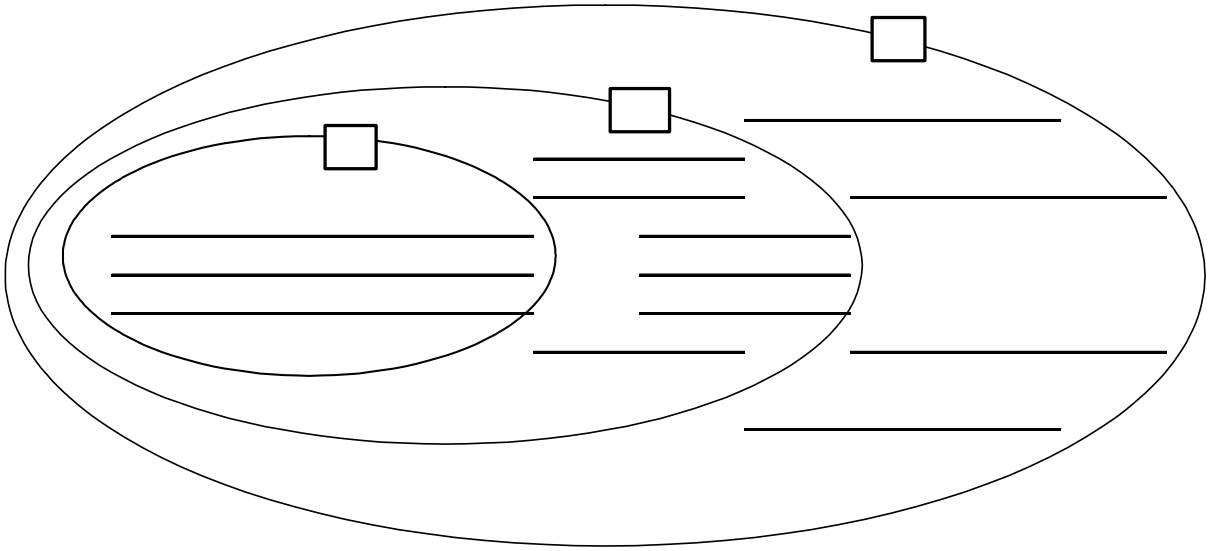
It's money in the bank. Or is it? The pie chart below represents the portion of day-to-day transactions we make with each type of money.

1. Begin by looking closely at the chart to estimate what portion of the circle is represented by each piece of the "pie."
2. Label each piece with the appropriate form of money. Your labels will include "Demand Deposits," "Paper Currency and Coins," and "Other Forms of Money."
3. Finally, complete the labels by writing what percentage of daily transactions is accounted for by each piece of the pie.



3.26 DIAGRAMMING

The chicken or the egg? The diagram below represents definitions of the Federal Reserve's money aggregates. In the boxes, write "M1," "M2," or "M3," where appropriate. On the lines, write the components of each definition of the money supply.



3.27 CATEGORIZATION

One of these things is not like the others. In this exercise, you'll see groups of items that are somehow related. In each group, one item does not belong. Identify the impostors and cross them out. Then explain how the remaining three are related.

Ex:
- student
- bartender
- ~~telemarketer~~
- economics instructor

Explanation:
The group consists of occupations I have had since I've been in college. I've never been a telemarketer, though, and that's probably for the better... unless, of course, I could interest you in—just kidding.

1.
- paper currency
- coins
- demand deposits
- overnight Eurodollars

Explanation:

2.
- standard of value
- store of value
- measure of wealth
- medium of exchange

Explanation:

3.
- durability
- accountability
- scarcity
- portability

Explanation:

4.
- money market deposits
- M1
- government securities
- large-denomination CDs

Explanation:

5.
- includes M1
- second-most liquid money group
- includes long-term repurchase agreements
- the most useful money supply measurement

Explanation:

6.
- includes paper currency
- includes commercial paper
- includes M2
- most liquid money aggregate

Explanation:

3.28 MATCHING

Match-ismo. Match the letter of each term in the column on the left to the MOST ACCURATE description in the column on the right.

a. liquidity
b. fiat money
c. M1
d. money aggregate
e. commodity money
f. fractional currency
g. money
h. L
i. money supply
j. scarcity
k. demand deposits
l. legal tender

1. _____ something that must be accepted for payment of any debts
2. _____ a definition of the money supply
3. _____ the least liquid definition of the money supply
4. _____ the ease with which an asset can be converted to an economy's medium of exchange
5. _____ the physical property of precious metal coins that deteriorates when the coins are debased
6. _____ money that has no intrinsic value
7. _____ anything that people will accept in return for resources, goods, or services, or in repayment of debts
8. _____ something that is worth a portion of the value of a unit of currency
9. _____ the narrowest definition of the money supply
10. _____ something that is intrinsically valuable, but can also be used as money
11. _____ the quantity of money in an economy
12. _____ funds that must be made available to the depositor on demand

3.29 LISTING

The fundamenta-list approach. Complete each list below.

1. List five uses for money.

   a.

   b.

   c.

   d.

   e.

2. List three functions of money.

   a.

   b.

   c.

3. List four essential physical properties of good money.

   a.

   b.

   c.

   d.

4. List four components of the M1 definition of the money supply.

   a.

   b.

   c.

   d.

5. List six components of M2 not included in M1.

a.

b.

c.

d.

e.

6. List four components of M3 not included in M2.

a.

b.

c.

d.

Inflation…….....

The **price level** is the average of all prices in an economy. When the price level increases, everything is more expensive.

Inflation is a sustained increase in the price level, lasting for at least two consecutive quarters. The **inflation rate** is the percentage by which the current price level has increased from the previous price level.

$$\text{inflation rate}_{year} = \frac{\text{price level}_{year} - \text{price level}_{previous\ year}}{\text{price level}_{previous\ year}} \times 100\ \%$$

When inflation occurs, a host of other economic problems may soon follow. For this reason, inflation is something we have to watch closely. You'll often hear about inflation in the news media. Sometimes, the news terminology can be misleading. Below is a list of some of the terms we use to describe inflation.

Hyperinflation: a very high rate of inflation; usually, a rate of more than 100 percent inflation.

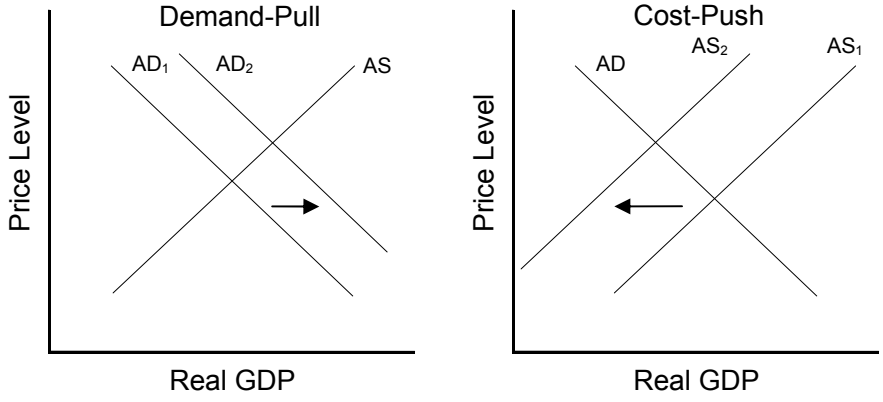
Disinflation: a decreasing rate of inflation; in other words, prices are rising, but not as fast as they have been rising in the recent past.

Deflation: a decreasing price level; a negative rate of inflation.

Constant inflation: a constant rate of inflation; prices rise at the same rate each period.

Accelerating inflation: an increasing rate of inflation; prices rise at a higher rate each period.

There are two major types of inflation. **Demand-pull inflation** results from "Too many dollars chasing too few goods." If aggregate demand shifts to the right, it drives up the price level and causes demand-pull inflation. **Cost-push inflation** is the result of rising production costs.



Economic Costs of Inflation

There are economic costs to inflation, including the **shoe leather cost** of repeated trips to the bank, the **menu cost** of reprinting price lists (e.g. menus) each time inflation causes prices to rise, and the **planning cost** of preparing financially for inflation. Also, there is a so-called **hidden tax** that results when inflation drives salaries into higher tax brackets without improving the quality of life. Finally, there are **allocative costs** that result from **sticky prices** for certain goods that cannot be increased in price as often as others. When a prices rise more quickly on one good than on another, goods are not allocated exactly according to value.

Unexpected inflation is an area of concern in economics because it **redistributes purchasing power**. From a debtor's standpoint, inflation is good news because it reduces the value of debt. From a lender's standpoint, inflation is bad news because it reduces the value of future income, which is collected in the form of outstanding debts.

Also, the threat of inflation can **limit economic growth**. Recognizing the threat of inflation, individuals sometimes choose to protect their assets, rather than make new investments. Without investment, there can be no economic growth.

3.30 WORD BANK

Cash in. Complete each statement below using terms from the word bank. You will not need to use any term more than once.

Word Bank		
base year cost-push creditor debtor deflation	demand-pull hidden tax hyperinflation inflation sticky prices	menu cost planning cost price level price stability shoe leather cost

1. The _____ of inflation is the cost of reprinting price lists each time the price level rises.
2. A very high rate of inflation is called _____.
3. If your salary increases because of inflation, you may suffer the cost of a so-called _____, which is the result of changing tax brackets without having more buying power.
4. The goal of _____ is achieved when there is moderate inflation, equal to the rate of productivity increase.
5. When the costs of the factors of production increase, it can drive up the price level. This is called _____ inflation.
6. A price index expresses the price level of the current year as a percent of the price level of a _____.
7. When there is too much aggregate demand to be satisfied by real GDP, the result is _____ inflation.
8. _____ is sustained upward movement in the price level, lasting at least two consecutive quarters.

9. The _____ of inflation is the cost of making repeated trips to the bank because money has lost value.
10. _____ is sustained downward movement in the price level, lasting at least two quarters.
11. The _____ is the average price of all goods and services produced and sold in an economy in a year.
12. The _____ of inflation is the cost of preparing for it financially.
13. _____ are prices for some firms that cannot change as quickly as other firms' prices.
14. Inflation is good news to a _____, but bad news to a _____.

3.31 KEY TERMS

Name-calling. Review these tables of inflation rates over time. Use one of the terms from the box to describe what is happening to the price level in each problem, below.

Terms		
disinflation	hyperinflation	deflation
constant inflation		accelerating inflation

1.

	Month		
	Dec.	Jan.	Feb.
Inflation rate	3%	4%	5%
Type of inflation:			

2.

	Month		
	Apr.	May	June
Inflation rate	5%	5%	5%
Type of inflation:			

3.

	Month		
	Jan.	Feb.	Mar.
Inflation rate	102%	102%	103%
Type of inflation:			

4.

	Month		
	Jan.	Feb.	Mar.
Inflation rate	7%	5%	4%
Type of inflation:			

5.

	Month		
	Jan.	Feb.	Mar.
Inflation rate	-3%	-2%	-4%
Type of inflation:			

The Consumer Price Index…….....

Price Index

A **price index** is a number that indicates the average price of a **market basket** (representative sample) of goods, relative to the average price of the same basket at another time. If a price index changes, we know that the prices of the goods in the basket have changed—even though the goods have not.

To create a price index, we first have to establish a **base year**, the starting point for the index. The average prices of the goods in the basket are represented by an index of 100 in the base year. When inflation occurs in subsequent years, the value of the index will increase. For example, if the index is 105, then we know that the average price of the goods in that year's basket is 105 percent of the average price in the base year. Prices have increased by five percent since the base year.

Consumer Price Index and Producer Price Index

The **Consumer Price Index** (CPI) is probably the best-known price index. It represents changes in the prices of goods and services consumed by households. The market basket used to determine the CPI contains over 2,000 goods and services, which are lumped into about 200 categories (such as breakfast cereal, rent, airfare, television, etc.) The categories are divided into major groups, which include **food and beverages**, **housing**, **apparel**, **transportation**, **medical care**, **recreation**, **education and communication**, and **other goods and services**. Each month, the Bureau of Labor Statistics gathers current price information about each item in the basket and uses those data to determine numerous versions of the CPI.

The **CPI-U** is the CPI for urban consumers. It is the most comprehensive CPI figure, the one most often quoted as "the CPI" in the media. The CPI-U represents the spending patterns of about 87 percent of the population. The **CPI-W** is based on the spending patterns of just Urban Wage Earners and Clerical Workers. The CPI-W population is part of the CPI-U population, representing about 32 percent of the population.

We use the CPI as an **economic indicator**. Changes in the CPI can indicate changes in the health of the economy. We also use the CPI to **adjust dollar values**; that is, we use it to filter the effect of inflation out of various economic measurements.

The Producer Price Index is based on a **market basket of producer goods,** or factors of production commonly bought by manufacturers.

The CPI (and its cousins) and the PPI are all compiled by the Bureau of Labor Statistics. You can see current CPI, PPI, and other price index data for yourself if you visit www.bls.gov.

Problems with Measuring Inflation

The Consumer Price Index is the most commonly used measure of the rising cost of living, but it is not entirely accurate. One problem is that the **"market basket"** is old, and is not often updated. The goods in the basket do not necessarily represent the goods that modern households are buying. For example, should iPods be part of the CPI? Another problem is that the basket approach **does not allow for substitution**. In real life, if the price of a good goes up, we are likely to buy a substitute or simply do without the good altogether. When the total cost of the market basket is measured, the real behavior patterns of consumers are not taken into consideration. Yet another problem is that the changes in the total price of the market basket are assumed to be solely caused by changes in the price level. In actuality, the **quality** of some of the goods may increase, and the increase in quality may result in a justifiable price increase, unrelated to inflation.

3.32 IN BRIEF

Short and sweet. Write a brief response to each of the following questions.

1. Suppose the price level for 1997 in the CPI is 160. By what percent did the price level rise between the base year and 1997? _____

2. Suppose the price level for 2001 in the CPI is 177. By what percent did the price level rise between the base year and 2001? _____

3.33 MATCHING

You can't strike these matches. Match the letter of each term in the column on the left with the BEST definition in the column on the right.

a. CPI-U
b. double-counting
c. nominal GDP
d. deflation
e. GDP per capita
f. PPI
g. inflation
h. indirect taxes
i. cost-push
j. GDP
k. real GDP
l. stagflation
m. the expenditures approach
n. net exports
o. demand-pull
p. BLS
q. CPI, PPI, GDP

1. _____ equal to GDP divided by the deflator
2. _____ C + I + G + X
3. _____ inflation that results from demand in excess of supply
4. _____ a rise in prices during a time of high unemployment
5. _____ the sum of all goods and services produced in an economy within a year
6. _____ measures of inflation
7. _____ a general rise in price levels
8. _____ subtracted, in the income approach
9. _____ exports sold, minus imports bought
10. _____ measures of GDP need to avoid this
11. _____ inflation that results from rising production costs
12. _____ commonly used as a measure of quality of life
13. _____ GDP, inflated
14. _____ compiles the CPI and the PPI
15. _____ a decrease in the overall price level
16. _____ the price index most commonly used
17. _____ consists of a market basket of production commodities

3.34 APPLYING KEY CONCEPTS

The price is right. Use the sample price index to calculate the rate of inflation for each given year.

Consumer Price Index (base period 1982 to 1984 = 100)

Year	*Index #*
1997	160.5
1998	163.0
1999	166.6
2000	172.2

1. Calculate the inflation rate in 1998:

2. Calculate the inflation rate in 1999:

3. Calculate the inflation rate in 2000:

Macroeconomic Goals…….....

The **Employment Act of 1946** and the **Full Employment and Balanced Growth Act of 1978** established the economic responsibilities of the U.S. Congress and the president. According to these two pieces of legislation, Congress and the president are responsible for pursuing three important **macroeconomic goals**. The first goal is **economic growth**, which is a steady increase in the economy's capacity to produce. The second goal is **full employment**. The Full Employment and Balanced Growth Act defined "full employment" as a condition in which there is no more than **four percent unemployment**. Considering that frictional unemployment will always be present in a society, four percent is very low. The third goal is **price stability**, which is a condition in which there is moderate inflation, approximately equal to the rate at which GDP is increasing. The Full Employment and Balanced Growth Act is also known as the **Humphrey-Hawkins Act**. It expired in 2000, but many of its provisions are still followed in practice.

3.35 IN BRIEF

You tell me. Write a brief response to each of the following questions.

1. In your own words, what is economic growth?

   _____

   _____

2. By definition, what is the goal of full employment?

   _____

   _____

3. What is the goal of price stability?

   _____

   _____

4. What is another name for the Full Employment and Balanced Growth Act of 1978?

   _____

3.36 WORD SEARCH

Don't wait to see their faces on a milk carton. Use the clues on the left to help you find words and phrases in the word search. Circle the terms as you find them.

1. Each definition of the money supply differs from the others because of this.
2. The GDP deflator and the PPI are examples.
3. The "_____ cost" of inflation refers to the cost of having to reprint price lists.
4. A macroeconomic goal that requires us to compare inflation to the rate of productivity increase.
5. We only use this for about 25 percent of our day-to-day transactions.
6. This and the Humphrey-Hawkins Act defined the economic responsibilities of the legislative and executive branches of government.
7. A price index of 100 corresponds to this.
8. For the CPI, this contains about 2,000 items.

A B E F J H A S D F W E R T
L C P R I C E I N D E X I Y
I D M A R K E T B A S K E T
Q O I E Y A R J G D F U O P
U P V X N E A K V C R T U I
I K R O Q U E O I P B I E A
D S E C O G Y M E Y H J G F
I S C I N T E N T M S K D H
T I S U M O S P N L A B I C
Y T I L I B A T S E C I R P
T A U V E W B X Y I Z A O K
E M P L O Y M E N T A C T U

A Closer Look at Aggregate Demand and Aggregate Supply.....

Aggregate supply does not function exactly like the supply curve of a single market. Aggregate supply is limited by an economy's capacity to produce. At some point, suppliers simply do not have the capacity to produce any more. If aggregate demand continues to increase past this point, the price level will rise, but equilibrium real GDP will not increase. For this reason, many modern models of the economy give the aggregate supply curve a kinked shape. This kink represents the full utilization of a society's resources.

The Aggregate Supply Curve

If the aggregate demand curve intersects the aggregate supply curve at any point below suppliers' capacity to produce, equilibrium falls below the economy's full employment of resources.

The aggregate demand curve is shaped like the demand curve for a single market; the price level is inversely related to the quantity demanded of real GDP.

Two other factors affect the shape of the **aggregate demand** curve. One is the **international effect**, which is what happens to aggregate demand when lower domestic prices encourage foreigners to demand more. Another is the **wealth effect**, which is what happens to aggregate demand when lower prices effectively leave domestic consumers more money to buy more things. The aggregate demand curve will shift in response to changes in **foreign income**, changes in consumers' **expectations of future income**, or changes in consumers' **expectations of future prices**. Also, changes in **exchange rates**, **income distribution**, and **government policy** can cause the curve to shift.

The aggregate supply curve shifts when **total output increases or decreases**. **Taxes** can increase or decrease aggregate supply by affecting suppliers' willingness or ability to produce. The **price of resources** can cause the curve to shift, too, by affecting suppliers' willingness or ability to produce. Changes in the **quality or composition of the labor force** will affect suppliers' productivity, therefore causing the curve to shift. Finally, **changes in the capital base**, which can increase or decrease the economy's productive capacity, can cause the curve to shift, too. If the aggregate supply curve shifts to the left, the society experiences **stagflation**: higher price levels with lower output.

If the aggregate demand curve intersects the aggregate supply curve at the bend, society is at **full employment equilibrium**. If the aggregate demand curve intersects the aggregate supply curve to the right of the bend, society is producing at greater than full employment capacity; it is **overheated** and probably experiencing inflation. If the aggregate demand curve intersects the aggregate supply curve to the left of the bend, society is producing at less than full employment capacity; it is in a recession.

3.37 CATEGORIZATION

On point. In this exercise, you'll see what happens to a factor that affects aggregate supply or aggregate demand. Your job is to demonstrate how aggregate supply or aggregate demand is affected by drawing an arrow that points in the appropriate direction.

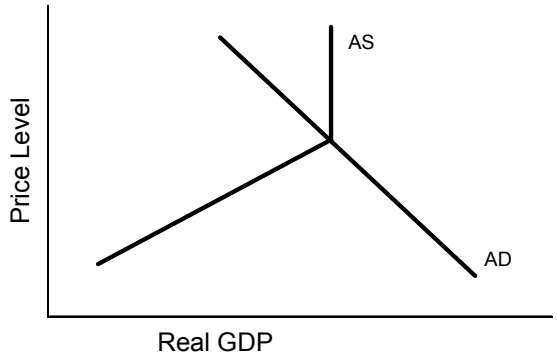
Ex:	Number of dropped calls:	↑	Number of friends to whom I recommend my cell phone carrier	↓
1.	The size of the capital base:	↑	Aggregate Supply:	
2.	Foreign income:	↑	Aggregate Demand:	
3.	Resource costs:	↑	Aggregate Supply:	
4.	Taxes	↓	Aggregate Supply:	
5.	Consumers' expected future income:	↓	Aggregate Demand today:	
6.	Income taxes:	↑	Aggregate Demand:	
7.	Income taxes:	↓	Aggregate Demand:	
8.	Resource costs:	↓	Aggregate Supply:	

3.38 MATCHING

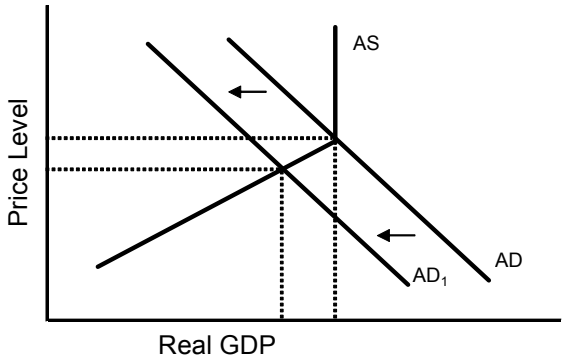
Equilibrium models. Match the letter of each type of equilibrium to the appropriate graph, below.

a. recession equilibrium
b. stagflation
c. full employment equilibrium
d. demand-pull inflation

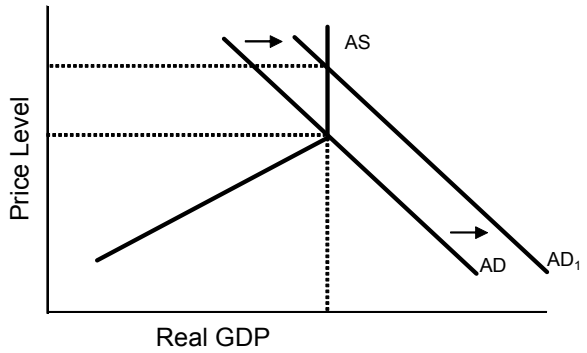
1. _____



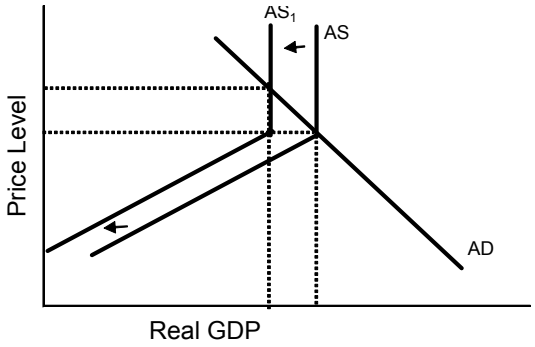
2. _____



3. _____



4. _____



Keynesian Economics in a Nutshell……...

Most of what you have learned about microeconomics is based on the classical theory of economics—the notion that prices can adjust automatically, that the market will clear, and that government intervention ought to be unnecessary. Classical economics more or less began when Adam Smith wrote his famous *An Inquiry into the Nature and Causes of the Wealth of Nations* (you might be familiar with the *"Wealth of Nations;"* this is the same book). Many economists and modern businesspeople still argue that Smith had the right idea, or at least, some of the right ideas.

Smith's ideas—and those of his contemporaries—formed the foundation for economic policymaking for over a century. Although the *Wealth of Nations* was written in 1776, it was not until the Great Depression in the 1930s that economists and policymakers began to question the classical model.

From an economics standpoint, the most pronounced feature of the Great Depression was probably unemployment—very high unemployment, in fact, so high that we haven't seen anything like it in the U.S. since that time. According to the classical model, the labor market should have "cleared" somewhere. In theory, there should have been no problem, because everyone in the labor force should have found a job at the right price.

Also, according to the classical model, supply should have created its own demand, so no one should have wanted any more than producers were willing to create. But in actuality, people couldn't afford to buy the things they wanted, and producers couldn't afford to hire people to help produce.

Clearly, the classical model must have gone wrong somewhere.

John Maynard Keynes (pronounced like, "John walks with two *canes*") tried to explain. Keynes was the first notable economist to offer a viable alternative to the classical theory. In the Keynesian model, **prices are not so flexible**. In particular, sellers may be more willing to raise their prices than they are to lower them. Workers certainly aren't very flexible when it comes to receiving paychecks. Also, Keynes suggested that perhaps supply does not *always* create its own demand, which could explain why aggregate supply and aggregate demand were not in equilibrium.

In the Keynesian model, the key to economic stability is to stimulate or cool aggregate demand in order to keep it in equilibrium with aggregate supply. Government taxation and spending—that is, fiscal policy—is the source of this control. When aggregate demand is too heated, the government should raise taxes and prevent consumers from having so much money to spend. When aggregate demand is sluggish, the government should cut taxes and put more money in the hands of consumers. Hopefully, consumers will turn around and spend it, and then aggregate demand will increase again.

Fiscal Policy Goals and Tools…….....

Monetary Policy versus Fiscal Policy

Whereas the Federal Reserve handles monetary policy in the U.S., the U.S. Congress and the president handle fiscal policy. **Fiscal policy** includes any action to influence the health of the economy by making changes to the federal budget. The goal of fiscal policy is to moderate the business cycle through taxes, government spending, transfer payments, and borrowing.

Fiscal Policy Options

There are two categories of fiscal policy tools. **Automatic stabilizers** are items built into the federal budget that automatically change when the business cycle changes. **Federal income taxes** are an example of an automatic stabilizer. In times of recession, when people have less money, they pay lower income taxes because the tax is a percentage of their income (and because lower amounts of income are taxed at lower rates.) The resulting boost in disposable income can help prevent aggregate demand from shifting too far to the left. In times of expansion, when people have more money, they pay more income taxes, so aggregate demand does not become too overheated. This change occurs without any action on the part of the government. **Unemployment compensation** is another automatic stabilizer; it's available to anyone who qualifies, so as more people become unemployed, more people automatically receive the benefits without any government action. As more people become employed, fewer benefits are received.

Discretionary fiscal policy is the other category of fiscal policy tools. It requires manipulating the revenues and expenditures in the federal budget to influence aggregate economic behavior. If the government **increases spending**, all else held constant, aggregate demand will shift. A **decrease in taxes** has a similar effect, although it does not work as quickly. With lower taxes, consumers have more disposable income to spend, so aggregate demand will increase. However, household income is only part of a tax cut, so the resulting increase in demand is not equal to the decrease in federal revenues. The goal of **expansionary fiscal policy** is to stimulate aggregate demand, rather than wait for "market forces" to restore the economy to a period of expansion. Expansionary policy can take the form of increased government spending, decreased taxes, or both. When the government raises spending, the G component of GDP increases.

3.39 IN BRIEF

Speak your mind. Briefly respond to each of the following questions.

1. What is the difference between fiscal policy and monetary policy?

   _____

   _____

2. What are the two categories of fiscal policy tools?

   _____

   _____

3. What is an automatic stabilizer?

   _____

   _____

4. Give two examples of automatic stabilizers:

   _____

   _____

5. What is discretionary fiscal policy?

   _____

   _____

6. Give two examples of discretionary fiscal policy tools:

   _____

   _____

7. What is the predicted effect of an increase in government spending, other factors held constant?

   _____

   _____

8. What is the predicted effect of a tax cut, other factors held constant?

   _____

9. How does expansionary fiscal policy aim to moderate the business cycle?

   _____

   _____

3.40 APPLYING KEY CONCEPTS

Cuts for gains. Assess what would happen in each case.

	IF	THEN	GOES
Ex:	You don't drink coffee	Your chance of having white teeth	↑
1.	Congress cuts personal income taxes	disposable income	
2.	Disposable income increases	Aggregate demand	
3.	Congress passes a Public Works bill employing a million people to build a bridge to Hawaii	Aggregate demand	
4.	The President increases taxes in order to pay off the national debt	Likelihood of a recession	

Interest Rates…….....

Interest is the cost of borrowing money. We usually express interest in the form of an annual **interest rate**. An interest rate is a percentage of a **principal**, or the amount borrowed. For example, if you borrow $1000 at 10 percent annual interest, then the principal is $1000 and the interest rate is 10 percent. After one year, you'll owe 10 percent more than you borrowed, or a total of $1100 ($1000 + (.10($1000)).

Banks make money by giving loans and charging interest on those loans. Like everyone else, banks worry about inflation. If a bank is waiting to collect money from a borrower, unexpected inflation can lower the value of the loan when it is finally repaid. For that reason, banks intentionally set interest rates high enough to compensate for inflation.

The stated interest rate on a new loan is the **nominal interest rate**, which includes the real rate and an inflation premium. When you take out a loan, the bank doesn't mention the inflation premium or the real rate; they simply offer you the funds if you agree to repay them at some nominal rate. You sign a form to agree to repay the loan at the nominal rate.

During an inflationary period, we can approximate the real interest rate on a loan by subtracting the inflation rate from the nominal interest rate.

Real Interest Rate = Nominal Interest Rate – Inflation Rate

Many loans have flexible interest rates, which are designed to automatically adjust in response to economic conditions. These rates are usually determined by adding some arbitrary rate to the prime rate. The **prime interest rate** is the rate banks charge for short-term loans to their most credit-worthy corporate customers. The prime interest rate is published in the ***Wall Street Journal***.

3.41 SENTENCE COMPLETION

Picky, picky, picky. Pick the word or phrase that best completes each statement below. Circle your answer choices.

1. Interest rates are usually expressed as a(n) [ANNUAL, QUARTERLY] percentage of a principal amount.
2. The [NOMINAL, REAL] interest rate is adjusted for inflation.
3. Some adjustable interest rates are pegged to the [PRIME, REAL] interest rate.
4. Inflation can [INCREASE, DECREASE] the value of outstanding loan balances.

The Role of Interest Rates

Interest rates do not only affect borrowers. They also affect people who are saving money. When you deposit funds into a savings account, you earn interest on your deposits because you are effectively lending your money to your bank. In this sense, interest acts as an incentive for you to spend money in the future, rather than the present. As you know, when you borrow money, you have to pay interest for the use of the funds you borrow. In this sense, a low interest rate might act as an incentive for you to spend money in the present, rather than the future, and a high interest rate might discourage you from borrowing and spending money in the present.

Interest rates influence how we allocate resources among present and future uses. When interest rates change, they affect the balance of saving and borrowing in the economy. Banks raise interest rates to discourage borrowing or encourage saving, and they lower rates to encourage borrowing or discourage saving.

The Price of Money

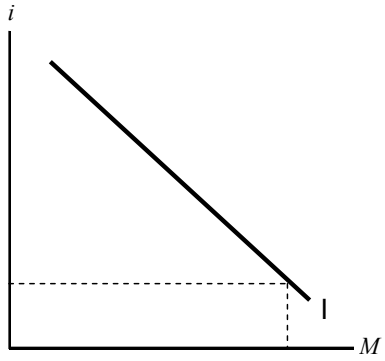
Interest is the price of borrowed money, and it is also the incentive to lend or save it. So just like any good or service, money has a price. As it turns out, we can use a simple supply and demand model to predict how rational people will respond to changes in interest rates.

Suppose we let the interest rate, *i*, represent the "price" of money. And suppose we say that people who want to borrow funds are demanding money; that is, the quantity of money demanded for loans is the "quantity

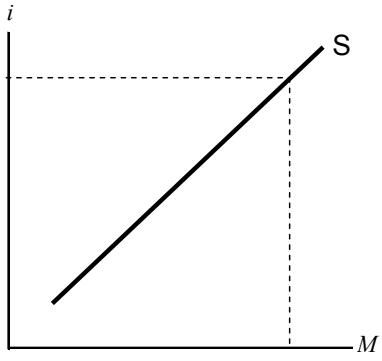
demanded" of money. People borrow money to make investments. Naturally, if the interest rate is high, then money is expensive to borrow, so people are unlikely to want to borrow very much of it; and if they can't borrow, they're unlikely to invest. On the other hand, when the interest rate is low, people will probably be more willing to make new investments; they can use money inexpensively. The graph of the relationship between investment and the interest rate is a familiar one. Just like the demand curve for any good or service, the demand curve for money—that is, the graph of the **investment function**—is downward-sloping.

Now consider another way to use money. Some people borrow money to make investments, but some people deposit it in banks in order to earn interest. When savers deposit their money, they supply banks with the funds to make loans to people who demand money. For simplicity, we can say that money-saving and money-supplying are nearly the same thing. When the interest rate is high, savers can earn more interest by saving more money, so they're likely to want to deposit money in banks. Banks are likely to want to make loans because they can earn so much interest on them. On the other hand, when the interest rate is low, savers don't stand to gain as much from saving, so they are unlikely to want to save as much. Banks don't earn as much interest on loans, so they are unlikely to make as much money. This relationship has a familiar graph. Not surprisingly, the supply curve for money—the graph of the **savings function**—is upward-sloping.

Demand for Money (Loanable Funds)

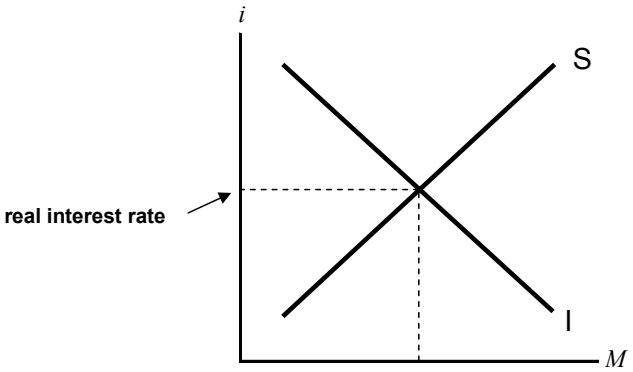


Supply of Money (Loanable Funds)



This market is called the **loanable funds market**. As with any good or service, the "market price" of money is set where the supply and demand curves intersect. In the loanable funds market, the **real interest rate** is set at the **intersection of the investment and savings curves**.

The Loanable Funds Market



A New Macroeconomic Goal: Targeting Interest Rates

Until the 1990s, we pursued the macroeconomic goals of price stability, increased productivity, and full employment. In the 1990s, however, those goals lost some importance and the Federal Reserve (discussed below) set its eye more firmly on a new target: maintaining economically beneficial interest rates. By putting economic pressure on financial institutions, the Federal Reserve could manipulate interest rates and in turn, the money supply. With interest rates as its primary target and tool, the Federal Reserve indirectly managed the other three macroeconomic goals.

3.42 WORD BANK

Follow the reserve requirement. Use the terms in the bank to complete each sentence, below. You will not need to use every term in the bank.

Term Bank		
borrow	investment	save
savings	real	nominal
exchanged	demanded	supplied
	prime	

1. In the loanable funds market, people who _____ money are the suppliers.
2. In the loanable funds market, people who _____ money are the people who demand it.
3. The graph of the _____ function is a downward-sloping curve.
4. The graph of the _____ function is an upward-sloping curve.
5. When the interest rate is high, the quantity _____ of money is low.
6. When the interest rate is high, the quantity _____ of money is high, too.
7. The _____ interest rate is determined at the intersection of the savings and investment curves.

3.43 IN BRIEF

The soul of wit. Briefly respond to each of the following questions.

1. Traditionally, what are the three major macroeconomic goals the U.S. has pursued?

   _____

2. In the 1990s, what stole the spotlight as the Federal Reserve's new starting point in pursuing macroeconomic goals?

   _____

3. What is the price of borrowed money?

   _____

The Federal Reserve…….....

The **Federal Reserve System** was established as the central bank of the U.S. when the Federal Reserve Act of 1913 was passed. It was designed as a "decentralized" central bank because at the time, centralized banking power was a divisive political issue. The Federal Reserve has six functions:

1. to determine and conduct monetary policy
2. to supervise and regulate financial institutions
3. to lend to banks and other financial institutions
4. to act as a bank for the U.S. government
5. to issue currency and coins
6. to provide certain financial services, such as clearing checks

The "Federal Reserve" consists of **12 districts**, each with its own bank. District banks can issue currency. There are also **25 branch banks**, which are smaller than the district banks.

The Federal Reserve is operated by a seven-member **Board of Governors**. Everyone on the board is appointed to a 14-year-term by the U.S. president, but the terms are spaced two years apart. This way, no president can appoint the entire board while in office. By law, no two board members can hail from the same

district. The **Chairman of the Board of Governors** is appointed from within the board. The Chairman serves a renewable 4-year term. The current Chairman is **Ben Bernanke**, who succeeded **Alan Greenspan.**

The members of the Board are part of the 12-member **Federal Open Market Committee.** The other five members of the FOMC are presidents from the 12 districts. The president of the **New York** district has a permanent seat on the FOMC.

The **Federal Advisory Council** is a committee of 12 prominent commercial bankers. Each member represents one of the 12 Federal Reserve Districts. The Council meets with quarterly with the Board of Governors to voice concerns about banking policy.

3.44 FILL-IN

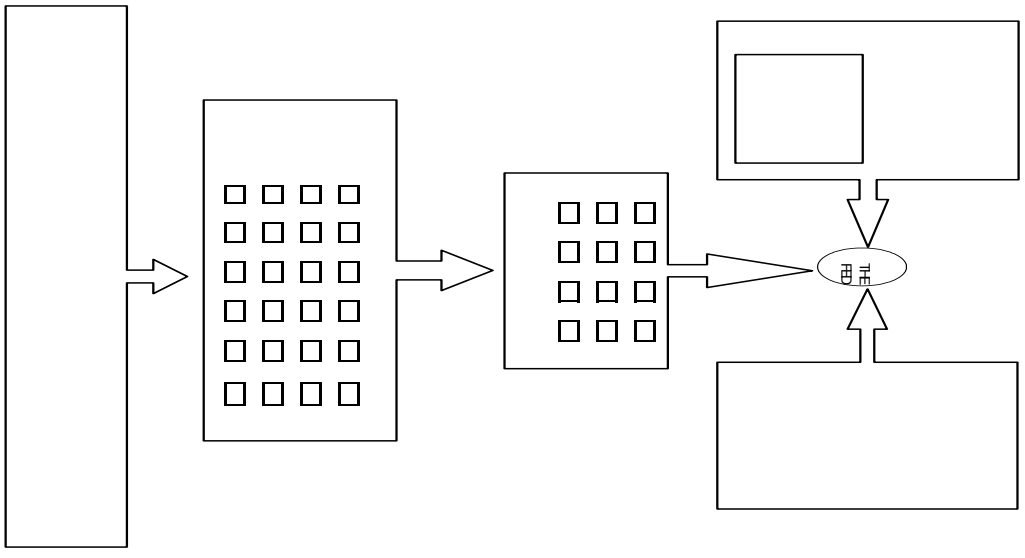
Number crunch. Complete each statement below.

1. There are _____ members of the Board of Governors of the Federal Reserve.
2. There are _____ branch banks in the Federal Reserve System.
3. The Federal Reserve System is comprised of _____ districts.
4. The Chairman of the Board of Governors is appointed to a renewable _____-year term, but the other members of the board each serve _____-year terms.
5. The Federal Open Market Committee has _____ members.
6. The maximum number of members of the Board of Governors from the same district is _____.
7. The Federal Advisory Council meets _____ times per year with the Board of Governors.
8. There are _____ members in the Federal Advisory Council.
9. The Federal Reserve System has _____ district banks.
10. _____ members of the Federal Open Market Committee are not members of the Board of Governors.

3.45 DIAGRAMMING

The Federal Reserve. Below is a diagram of the Federal Reserve System. Label each part, using the terms listed below.

Board of Governors
Member Banks
12 District Banks
Federal Open Market Committee
25 Branch ("Federal") Banks
Federal Advisory Council



Fractional Reserve Banking.....

The U.S. has a **fractional reserve banking system,** in which only a fraction of the money deposited into a bank actually remains there. The rest is loaned out with interest so that banks can earn a profit. The portion of a deposit that a bank is required to keep is the **required reserve**, and it is expressed as a mandatory percentage of deposits. That percentage is the **reserve ratio**, and it is set by the Federal Reserve.

We use the fractional reserve banking system to generate money without even having to print it. When a person makes a deposit at a bank, the bank holds onto the required reserve of it. For instance, if a person deposits $1000, and the reserve ratio is 10 percent, then the bank is required to keep $100 on hand. To make money, the bank will then lend the remaining $900 to someone else. Now suppose that person deposits all $900 in another bank. That bank will have the same reserve ratio, so it will keep $90 and lend the other $810… to someone who will deposit it in another bank. And the process will continue.

We can use the simple money multiplier to estimate approximately how much money will be generated by a change in a component of the money supply. The **simple money multiplier** is just the inverse of the reserve ratio. For example, if the reserve ratio is 10 percent, or 1/10, then the simple money multiplier is 10. If we increase the amount of cash in the hands of the public by $100, and the simple money multiplier is 10, then the money supply will increase by $1000, or 10 x $100.

$$\text{simple money multiplier} = \frac{1}{\text{reserve ratio}}$$

Of course, not everyone spends or deposits every penny they earn, so this simple multiplier generally overstates the "real" multiplier. But it's a useful guide for understanding why banks can have so much power over the size of the money supply.

3.46 APPLYING KEY CONCEPTS

Practice makes perfect. In this exercise, you'll put the fractional reserve banking system into practice at its most basic level. Answer each question below.

1. If the reserve ratio is 10%, what is the simple money multiplier?

2. If the reserve ratio is 20%, what is the simple money multiplier?

3. If the reserve ratio is 33⅓%, what is the simple money multiplier?

4. If the reserve ratio is 25%, what is the simple money multiplier?

5. If the reserve ratio is 50%, what is the simple money multiplier?

6. If the simple money multiplier is 10, what is the reserve ratio?

7. If the simple money multiplier is 3, what is the reserve ratio?

8. If the simple money multiplier is 5, what is the reserve ratio?

9. Suppose a Federal Reserve representative knocks on your door one day and hands you $1000. You head to the bank to deposit it. If the reserve ratio is 25%, how much money can be created from your deposit?

10. In #9, if the reserve ratio were 33⅓%, how much money could have been created from your deposit?

Tools of the Federal Reserve.....

Monetary Policy

The Federal Reserve System works to pursue the macroeconomic goals of the United States by determining and implementing **monetary policy**. Monetary policy describes any policy action to influence the health of an economy by manipulating its **money supply**.

The Federal Reserve uses three main tools to influence the money supply. One tool is **open market operations**, which is the buying and selling of government securities. This is the most useful tool of the Federal Reserve, and the one that is most often used. When the Federal Reserve buys a government security (such as a long-term government bond) from a bank, it puts money into the bank. The bank, in turn, has more money on hand (although it has equally less value in assets), so it will then use that money to make loans. As you know, when a bank makes a loan, the loaned funds will be deposited at another bank, where the excess reserves can be lent out again, then deposited. The excess reserves from that deposit will be lent out again, and then deposited again, and so forth. The Federal Reserve will **buy government securities to increase the money supply** or **sell government securities to decrease the money supply**.

Another tool of the Federal Reserve is to **raise or lower the discount rate**. The discount rate is the interest rate the Federal Reserve charges to member banks when it lends them money. If the Federal Reserve wants to encourage banks to borrow money, then it can lower the discount rate. If banks borrow, they'll have more money on hand, so they'll make more loans, which will eventually increase the money supply. Similarly, to discourage banks from borrowing, the Federal Reserve can raise the discount rate. The Federal Reserve will **lower the discount rate to increase the money supply** or **raise the discount rate to decrease the money supply**. This tool is not used very often because its results are difficult to predict. When the Federal Reserve alters the discount rate, it may hope to affect banks' willingness to borrow, but it can't actually control it. By contrast, when the Federal Reserve buys or sell securities, it can control exactly how much money it is manipulating.

The third tool of the Federal Reserve is to **raise or lower the reserve requirement**. If the Federal Reserve raises the reserve requirement, then banks will have less excess reserves available to make loans. If the Federal Reserve lowers the reserve requirement, then banks will have a greater percentage of deposits available to make loans. Of course, the reserve requirement is simply the inverse of the simple money multiplier; if the reserve ratio increases, then the money multiplier will decrease. The Federal Reserve will **lower the reserve requirement to increase the money supply** or **raise the reserve requirement to decrease the money supply**. As it turns out, the Federal Reserve rarely changes the reserve requirement, because doing so could have a tremendous and hard-to-control effect on the economy.

3.47 IN BRIEF

Short answer. Write a brief response to each of the following questions.

1. What is monetary policy?

   _____

2. What are the three main tools the Federal Reserve uses to influence monetary policy?

   _____

3. What are open market operations?

   _____

   _____

4. What is the discount rate?

   _____

5. Which monetary policy tool does the Federal Reserve use most often?

   _____

3.48 APPLYING KEY CONCEPTS

Can you point me in the right direction? In part A, you'll see what happens to something that can affect the money supply. Respond by drawing an arrow to show whether the related item will increase or decrease. In part B, you'll read about something that happens, which will influence the money supply. Respond by drawing an arrow to show how the related item will be affected.

Part A.

	IF	GOES	THEN	GOES
Ex:	Number of hours you study economics with your team		Likelihood you'll medal in economics	
1.	reserve requirement		money multiplier	
2.	money multiplier		money supply	
3.	reserve requirement		money supply	
4.	discount rate		likelihood banks will borrow from the Federal Reserve	
5.	loans the Federal Reserve makes to banks		money supply	
6.	reserve requirement		money supply	
7.	discount rate		money supply	
8.	reserve requirement		excess reserves	

Part B.

	IF	THEN	GOES
Ex:	You don't study economics	Your chance of impressing the judges who interview you	

9.	the Federal Reserve buys a government security	money supply	
10.	the Federal Reserve raises the discount rate	money supply	
11.	banks borrow more money from the Federal Reserve	money supply	
12.	a government plane flies over L.A. and drops cash on the citizens of L.A., who then go make deposits at their banks	loans made by banks in L.A.	
13.	people suddenly panic about the banking system and withdraw all of their deposits from banks	money supply	
14.	fractional reserve banking as we know it is outlawed	money supply	

The Federal Budget.....

The **federal budget** is an itemized account of the federal government's outlays and receipts for a fiscal year. **Outlays** are government expenditures. **Receipts** are government collections. As you'll recall, one role of government in our mixed market economy is to minimize market failures. The budget outlays reveal how the government fulfills this role. About one-third of the federal budget is appropriated to **discretionary outlays**. This is the only portion of the budget that Congress has the authority to change. Discretionary outlays include planned expenditures for the following:

- **National Defense (by far the greatest part of the federal budget)**
- **Homeland Security**
- **International Affairs**
- **General Science, Space, and Technology**
- **Energy**
- **Natural Resources & the Environment**
- **Transportation**
- **Education**
- **Income Security**
- **Housing Assistance**

Two-thirds of the federal budget is appropriated to **mandatory outlays**. These are expenditures that Congress is obligated by law to pay. If Congress wishes to increase a mandatory outlay, the increase is subject to **Pay-As-You-Go (PAYGo) Law**, which holds that an expense cannot be approved if Congress cannot generate the revenue to pay for it. Mandatory outlays include the following:

- **Agriculture**
- **Commerce & Housing**
- **Health**
- **Federal Employee Retirement & Disability**
- **Food & Nutrition**
- **Interest Payments on National Debt**

Receipts are collected in the form of tax revenues and borrowed funds. If the government does not collect enough taxes to pay for the budgeted outlays, then it must borrow money to cover the difference. To borrow money, the government sells debt securities (such as long-term bonds) to the public. Receipts include:

- **Personal Income Tax** (this is the largest source of federal revenue, amounting to about half)
- **Corporate Income Tax**
- **Excise Taxes**
- **Import Taxes** (tariffs)
- **Payroll Taxes.** These include:
    - **Medicare Tax**
    - **Social Security Tax**

To view the complete federal budget, or to learn more about the budget and the budget process, visit www.whitehouse.gov/omb.

Deficit and Surplus

A **budget deficit** exists when total outlays exceed total revenues. Congress borrows funds to finance the difference. The debt that accumulates as the federal government continues to borrow money over time is the **national debt**. Regardless of when the debt is repaid, the interest payment on the debt is mandatory. The projected budget deficit for 2008 is about $410 billion; by June 2008, the total national debt had accumulated to about $9.5 trillion, or about 65% of GDP and over $30,000 per person in the United States.

The last time the federal government both had a balanced budget and had paid off the entire national debt was 1835.

A **budget surplus** exists when total revenues exceed total outlays. The difference is applied to the repayment of national debt. Recent budget surpluses existed in 1968 (during the presidency of Lyndon Johnson) and 1998-2001 (during the presidency of Bill Clinton.)

According to the Office of Management and Budget, the current administration attributes the skyrocketing national debt to "challenges posed by recession, terrorist attacks, corporate scandals, and the War on Terror."

3.49 CATEGORIZATION

Discretionary or Mandatory? Indicate whether each outlay below is mandatory (M) or discretionary (D).

1.	D	M	National Defense
2.	D	M	Housing Assistance
3.	D	M	Homeland Security
4.	D	M	Medicare
5.	D	M	Education
6.	D	M	Federal Employee Retirement & Disability
7.	D	M	General Science, Space, and Technology
8.	D	M	Energy
9.	D	M	Food and Nutrition
10.	D	M	Net Interest
11.	D	M	Unemployment Compensation
12.	D	M	Agriculture
13.	D	M	Transportation
14.	D	M	Commerce & Housing
15.	D	M	Invading Foreign Republics

3.50 MATCHING

Term-ites. Match the letter of each term in the column on the left to a description in the column on the right.

a. surplus
b. deficit
c. mandatory
d. discretionary
e. receipts
f. outlays
g. national debt
h. excise tax
i. "payroll taxes"
j. personal income tax
k. corporate income tax
l. import tax

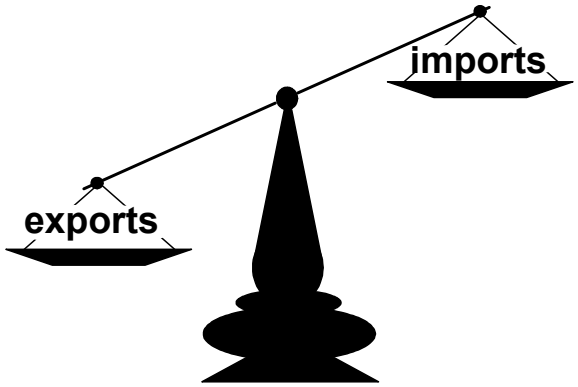
1. _____ consists of the Social Security tax and the Medicare tax
2. _____ imposed on a good whose demand is price inelastic
3. _____ the source of about ten percent of total receipts in the federal budget
4. _____ the money the federal budget collects
5. _____ budgeted expenditures
6. _____ when total outlays exceed total revenues
7. _____ the net of federal borrowing over time
8. _____ outlays over which Congress has direct control
9. _____ a relatively small portion of receipts; normally imposed to protect domestic infant industries from foreign competition
10. _____ when total revenues exceed total outlays
11. _____ the source of about half of total federal tax receipts
12. _____ outlays mandated by law

IV. International Trade & Economic Development

This section covers everything in Section IV of the curriculum outline as well as some aspects of Section I with relate to international trade.

Basics of Trade……..……..

In order to consume beyond its production possibilities frontier, a country must trade with other countries. A country can **export** goods, selling them to other countries. A country can also **import** goods, buying them from other countries. The **balance of trade** is the difference between a country's exports and imports. When imports exceed exports, a **trade deficit** exists. If exports exceed imports, a **trade surplus** exists.



A trade surplus occurs when exports exceed imports.

Sometimes countries impose **trade barriers**, or restrictions on international trade. **Trade barriers** are a form of **protectionism**. They protect domestic markets from international competition. One type of trade barrier is a **tariff**, which is a tax on an international good. Another type of trade barrier is an **import quota,** or a limit on the amount of a particular good that may be legally imported. Finally, the most restrictive type of trade barrier is an **embargo**. An embargo can prohibit the exchange of any single good or it can completely prohibit trade with a whole country.

Sometimes countries sign treaties in which they voluntarily agree to certain restrictions on trade. However, tariffs, quotas, and embargos happen without the consent of the foreign country. They are enforced domestically.

Economists tend to disagree with the use of trade barriers. They usually advocate **free trade**, or trade without restrictions, because it improves consumption possibilities for everyone involved. However, trade barriers are often imposed for political reasons. We'll discuss those reasons shortly.

4.01 SENTENCE COMPLETION

Incomplete (THOUGHTS, SENTENCES). Circle the word or phrase that BEST completes each statement below.

1. Country X has declared that only 10,000 barrels of banana juice can be imported from country Y this year. X is restricting international trade with a(n) (EMBARGO, QUOTA).
2. A trade (SURPLUS, DEFICIT) occurs when imports exceed exports.
3. Tariffs are imposed on (IMPORTS, EXPORTS).
4. If country Y declares that no trade whatsoever shall be conducted with country X, Y is imposing an (EMBARGO, IMPORT QUOTA).
5. An important difference between a tariff and an import quota is that a government does not directly earn revenue from a(n) (TARIFF, IMPORT QUOTA).
6. When exports exceed imports, the balance of trade is (FAVORABLE, UNFAVORABLE).
7. A trade (SURPLUS, DEFICIT) occurs when exports exceed imports.
8. When a tariff is imposed on an international good, the result is that consumers are (MORE, LESS) likely to buy the domestic substitute.
9. As of 2006, the United States had in place (EMBARGO, IMPORT QUOTA), prohibiting all trade with and travel to Cuba.
10. By engaging in international trade, a nation is able to move its Production Possibilities Frontier into a region that was once (UNATTAINABLE, INEFFICIENT).

4.02 MATCHING

Matches can start fires. Match the letter of each term in the column on the left to the best available description in the column on the right. You will need to use each term only once.

a. trade
b. import
c. export
d. balance of trade
e. trade deficit
f. protectionism
g. free trade
h. embargo
i. tariff
j. import quota

1. _____ can completely prohibit trade with a country
2. _____ to sell goods to other countries
3. _____ a tax on an import
4. _____ what most economists prefer to protectionism
5. _____ the means by which a country can improve its production possibilities
6. _____ to buy goods from other countries
7. _____ the ratio of imports to exports
8. _____ a restriction on the amount of a good that may be imported
9. _____ exists when imports exceed exports
10. _____ the ideology associated with sheltering domestic markets from international competition

Absolute and Comparative Advantage……..……..

Individuals can benefit from specializing in the production of a single good or service and then making exchanges to obtain the other goods and services they want. Similarly, countries can benefit from specializing in the production of some goods and trading to obtain other goods. As we have discussed, trade enables a country to improve its production possibilities. To determine which goods to produce and export, and which goods to import, a country must examine its production possibilities.

Relative Price

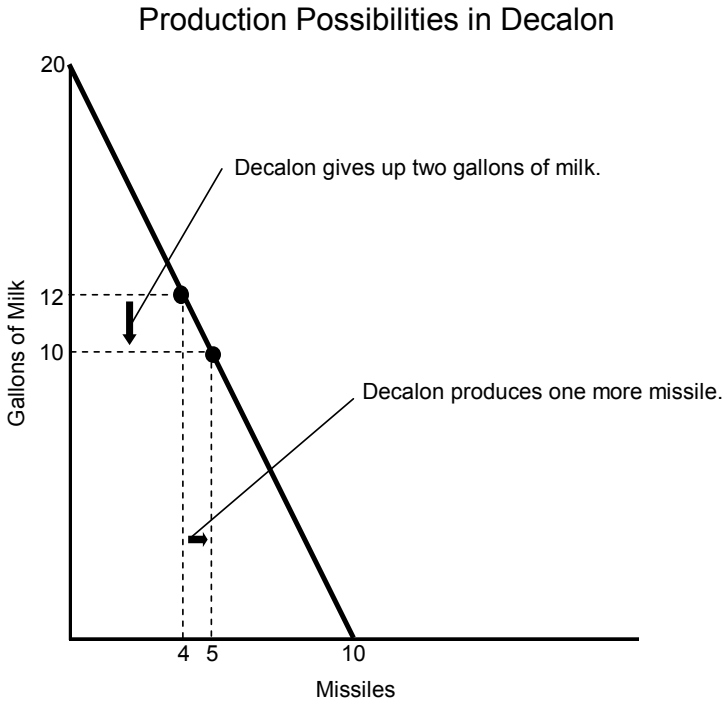
The **relative price** of a good is the cost of producing it, expressed in terms of an alternative good. In other words, the relative price of a good is the **opportunity cost** of producing one more unit of it, expressed as a quantity of the alternative good.

$$\text{Relative Price of Good A} = \frac{\text{Total Possible Units of Good B}}{\text{Total Possible Units of Good A}}$$

$$\text{Relative Price of Good B} = \frac{\text{Total Possible Units of Good A}}{\text{Total Possible Units of Good B}}$$

Let's consider an example. Suppose we can combine all of one country's resources (land, labor, capital, and entrepreneurship) into "units" of resources. In the country of Decalon, one such unit of resources can produce 10 missiles but no milk. Alternatively, it can also be used to produce 20 gallons of milk but no missiles[9]. And of course, one unit could be used to produce some combination of missiles and milk. To produce a missile, two gallons of milk must be given up. Thus, the relative price of one missile is 2 gallons of milk. On the other hand, the relative price of milk is ½ missile per gallon. To produce one more gallon of milk, the country must trade off ½ missile.

The Production Possibilities Frontier depicts the trade-off decision between two goods. The PPF for Decalon can help us to visualize the relative prices of milk and missiles:



The relative price of a good is important when we compare it with the relative price of the same good in another country. From one country to the next, the relative price of a good will differ if each country has natural resources or a different climate. Also, the social values in one country might differ from those of another, so the people in one country might be eager to work more hours than the people in another country. When the relative price of a good is different in each of two countries, those two countries should trade because both will benefit. Later in this workbook, we'll further explore the benefits of trade.

[9] Evidently, Decalon is run by a militant, lactose-intolerant tyrant. – Jessica

4.03 APPLYING KEY CONCEPTS

Relatively speaking. Answer each of the following questions in the form of "____ units of (the alternative)."

1. The U.S. can produce 12 units of nuclear missiles or 60 units of milk. What is the relative price of one unit of missiles?

   _____

2. The U.S. can produce 150 units of clothing or 2 units of fighter planes. What is the relative price of one unit of fighter planes?

   _____

3. The U.S. can produce 200 units of toothbrushes or 20 units of squirt guns. What is the relative price of one unit of squirt guns?

   _____

4. The U.S. can produce 50 units of grain or 2 units of clothing. Nicaragua can produce 20 units of grain or 1 unit of clothing. What is the relative price of one unit of clothing in Nicaragua?

   _____

5. Japan can produce 15 units of cars or 30 units of food. Germany can produce 10 units of cars or 35 units of food. What is the relative price of one unit of cars in Japan?

   _____

Comparative Advantage……..…….

Just as a dairy farm can produce milk more efficiently than it can produce nuclear missiles, a country can produce some goods more efficiently than others. If one country can produce a good at a lower relative price than another country, the first has a **comparative advantage** in the production of the good. According to the **law of comparative advantage**, if a country has a comparative advantage in the production of a particular good, the country should produce and export that good.

A country can improve its domestic production possibilities by trading with other countries. When a nation uses its comparative advantages for trade, it **specializes** in the production of those goods or services. In turn, the country imports other goods in which other countries specialize.

In theory, if every country were to strictly adhere to the law of comparative advantage, everyone involved in trade would benefit from it, because each country would produce goods and services at the least possible relative cost. This is why economists often advocate **free trade**. Unfortunately, **protectionism** often interferes with such beautiful economic theories. Rather than specialize in some goods and import others, countries impose trade barriers that protect their domestic markets for goods they ought to be importing—rather than producing.

For example, a few years ago, the U.S. imposed a tariff on imported steel. The purpose of the tariff was to protect American steel producers from international competition. Of course, the American steel industry was delighted by the tariff when it was imposed.

Unfortunately, the implications of the tariffs are bad news for production. If the steel industry cannot be successful without that kind of protection, we can infer that steel production in the U.S. makes inefficient use of our scarce resources. Like it or not, the U.S. simply does not have a comparative advantage in the production of steel. But just try arguing about comparative advantage with a steelworker who might have lost his job without that tariff. For that matter, try explaining it to his family. We can certainly understand why a country will sometimes choose to protect an industry, rather than pursue efficiency.

4.04 IN BRIEF

I can't think of a clever way to introduce this exercise. Answer each question below.

1. Suppose the relative price of a bushel of wheat in the U.S. is three pairs of shoes. If the relative price of a bushel of wheat in Mexico is six pairs of shoes, which country has a comparative advantage in the production of shoes?

   _____

2. Suppose the relative price of a nuclear missile in the U.S. is 35,000 gallons of milk. If the relative price of a nuclear missile in Decalon is 12,000 gallons of milk, which country has a comparative advantage in the production of nuclear missiles?

   _____

3. Suppose the relative price of a pound of beef in Spain is three pounds of potatoes. If the relative price of a pound of beef in Peru is 30 pounds of potatoes, which country has a comparative advantage in the production of beef?

   _____

4. In the previous question, which country has a comparative advantage in the production of potatoes?

   _____

4.05 APPLYING KEY CONCEPTS

Dare to compare. Know a comparative advantage when you see one.

1. Use the data in the table to answer the questions that follow.

	Production Possibilities with One Unit of Resources		
Country	**Pieces of Clothing**		**Cars**
U.S.	60	*or*	20
Germany	15	*or*	25

   a. What is the relative price of a car in the U.S.? _____

   b. What is the relative price of a car in Germany? _____

   c. What is the relative price of a piece of clothing in the U.S.? _____

   d. What is the relative price of a piece of clothing in Germany? _____

   e. Which of the two countries has the comparative advantage in the production of cars?

      _____

   f. Which country should export cars?

      _____

   g. Which of the two countries has the comparative advantage in the production of clothing?

      _____

   h. Which country should export clothing?

      _____

2. Use the data in the table to answer the questions that follow.

	Production Possibilities with One Unit of Resources		
Country	**Pounds of Cheese**		**Pounds of Fish**
Japan	10	*or*	50
France	40	*or*	20

a. What is the relative price of a pound of cheese in Japan? _____

b. What is the relative price of a pound of cheese in France? _____

c. What is the relative price of a pound of fish in Japan? _____

d. What is the relative price of a pound of fish in France? _____

e. Which of the two countries has a comparative advantage in the production of cheese?

_____

f. Which country should export cheese?

_____

g. Which of the two countries has a comparative advantage in the production of fish?

_____

h. Which country should export fish?

_____

Absolute Advantage……

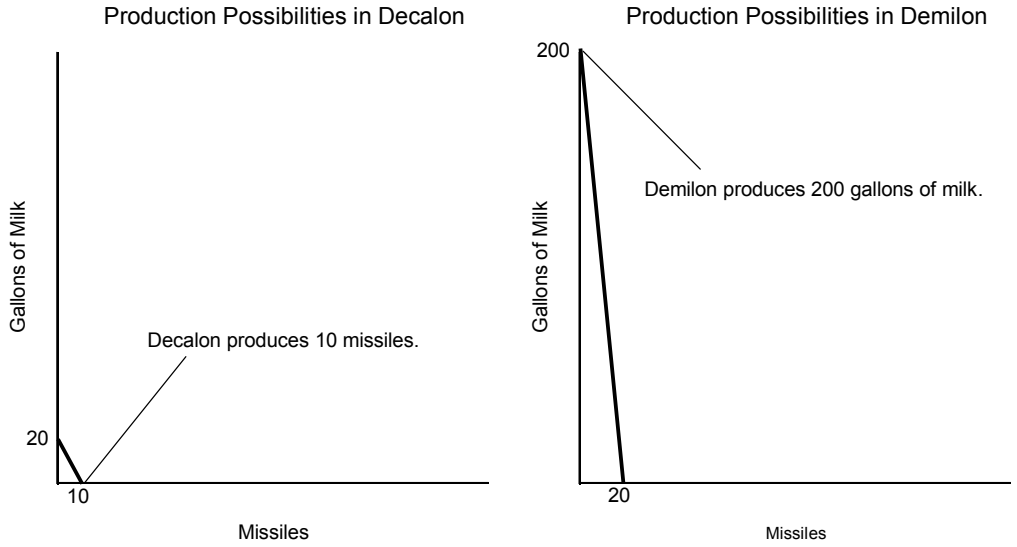
Some countries are more efficient than others at producing certain goods. When one country can produce a good with fewer total resources than another country, the first has an **absolute advantage** in the production of that good.

One way to determine whether a country has an absolute advantage over another country is to compare their production possibilities for two goods. If one country can produce more of both goods than the other, then the first has an absolute advantage.

Let's consider an example. Earlier, we looked at Decalon's production possibilities, using one imaginary "unit of resources." Decalon can produce 10 missiles or 20 gallons of milk with that unit. This means Decalon uses 1/10 unit of resources to produce a missile, or 1/20 unit to produce a gallon of milk. Now suppose Demilon can produce 20 missiles or 200 gallons of milk with one unit of its resources. Demilon uses 1/20 unit of resources to produce a missile, or 1/200 unit to produce a gallon of milk. Demilon uses fewer total resources to produce either good, so Demilon has an absolute advantage over Decalon in producing either good.

We might be tempted to think Demilon should produce both milk and missiles, and export both of them to Decalon. But recall the rule about relative price: When the relative price of a good is different in two countries, the two countries should trade. Keeping this rule in mind, we can expand on the law of comparative advantage: **Regardless of whether one country has an absolute advantage, if a country has a comparative advantage in the production of a particular good, the country should produce and export that good.**

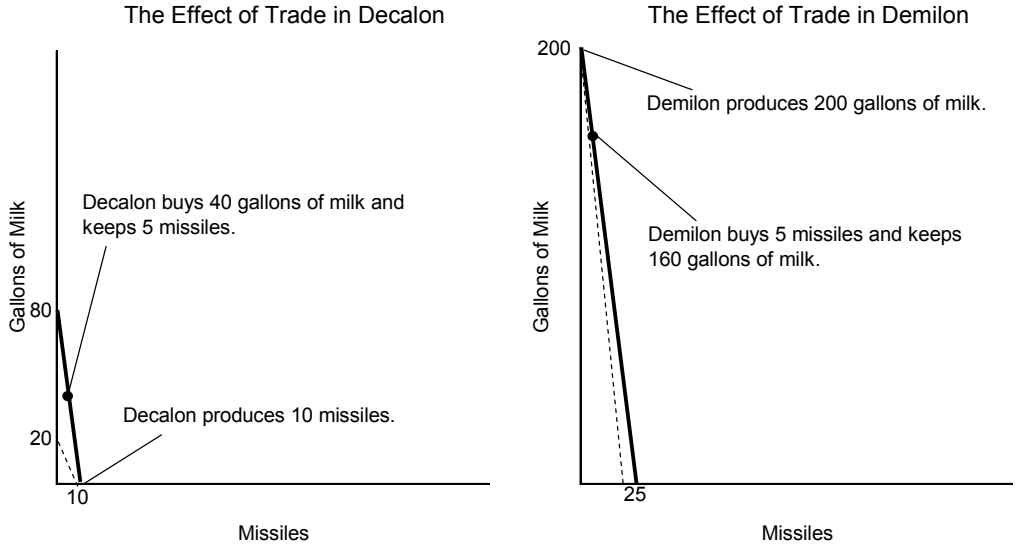
Returning to our example, we see that Decalon can produce missiles for the lower relative price: two gallons of milk per missile. Demilon can produce milk for the lower price: 1/10 missile per gallon. We'll assume the two countries have good relations, so they agree to each specialize in their comparative advantage good. The graphs below represent the production possibilities in both countries.



Now suppose Demilon and Decalon decide to exchange milk for missiles at a rate of 8 gallons per missile (or 1/4 missile per gallon). If Decalon traded all 10 of its missiles, it could buy 80 gallons of milk from Demilon. If Demilon traded all 200 of its gallons, it could buy 25 missiles, in theory, but Decalon can't quite produce that many. Suppose Demilon trades only 40 of its gallons of milk. The country buys 5 missiles and keeps 160 gallons of milk. Decalon sells 5 missiles for 40 gallons, and keeps the other 5 missiles. Without trade, Demilon could only have had 5 missiles and 150 gallons of milk, and Decalon could only have had 5 missiles and 10 gallons of milk. With trade, Demilon gains 10 more gallons of milk and Decalon gains 30 more gallons.

Although Demilon has the absolute advantage in the production of both goods, both countries benefit from trade. Both countries increase their consumption possibilities.

You might find it helpful to see a graph of the effects of trade. In the graphs below, I've reproduced the original production possibilities frontiers for both countries. I've also added a frontier to each graph to represent the goods each country could possibly consume after trade. Notice how in each country, trade moves consumption into the "unattainable" production region.



4.06 IN BRIEF

Brevity is the soul of a date at MIT. Write a brief response to each question below.

1. What term describes the position of a country that can produce a good more efficiently than another country?

   _____

2. If country A has an absolute advantage over country B in the production of each of two goods, which good should country A produce?

   _____

3. When a country has an absolute advantage in the production of each of two goods, why shouldn't it produce and export both goods?

   _____

4.07 CASE STUDY

Practice makes perfect. Read the scenario below and answer the questions that follow.

Scenario: Spain can produce 300 pounds of potatoes or 60 bushels of wheat. Peru can produce 500 pounds of potatoes or 25 bushels of wheat. Suppose Spain produces only wheat and Peru produces only potatoes. The world price of a bushel of wheat is 10 pounds of potatoes.

1. How many bushels of wheat can Peru buy? _____
2. How many bushels of wheat can Peru gain from trade (over and above what it could produce if it specialized in wheat)? _____
3. How many pounds of potatoes can Spain buy? _____
4. How many pounds of potatoes can Spain gain from trade? _____
5. Will both countries benefit from trade? _____

Economic Growth and Development…….....

You have learned how nations can improve their access to good and services by specializing in the production of some and trading to obtain others. In theory, it seems that every country ought to sit down with its best economist and decide when to produce and when to trade, and the whole world would benefit. But of course, that's just not the way the world works. In this section, we'll briefly examine the relationship between international trade and the economic development of nations around the world.

Development Patterns

A nation's economic development is driven by four factors: the **availability of natural resources,** the **size and quality of the labor force**, the nation's **access to capital goods** needed for production, and **the willingness and ability of the government to promote economic development**. The last factor is a function of the nation's values. Of course, some nations disagree about whether or how to pursue economic development.

Typically, an economy begins its development with the production of simple goods such as textiles and agricultural products, enough for the people within its borders. Any surplus is traded to obtain additional goods. When the nation's leaders wish to pursue economic growth, they will typically alter their position in the world market. One strategy is to decrease their own reliance on imported goods (by producing them domestically). This strategy is called **import substitution.** Another approach is to increase other nations'

reliance on the nation's exports (by intentionally producing the goods that other countries seem to need). This approach is called **export promotion**.

Problems with Development

In lesser-developed nations, economic development is often troublesome because the four driving factors are not in place. The workforce may be too old or inadequately skilled. Natural resources simply may not exist. And without foreign investment, producers may not have the means to incorporate modern, industrial technology. Also, the government may be unwilling or unable to effectively promote economic development.

The Cost of Trade Restrictions

Economists tend to agree that free trade will benefit all concerned. Nearly everyone else sees things differently, though. Rather than throw open their doors and welcome international trade, every nation has its own strategies of protecting its interests in the world market. Unfortunately, in the long run, those tactics tend to do more harm than good.

As you have learned, nations impose tariffs on imported goods, usually to encourage their own citizens to buy from domestic producers (whose products are made to seem less expensive to the consumer). Producers benefit from the tariffs, of course. But consumers wind up funding the inefficiency of their local industries; they pay a higher price for the domestic product than they would have had to pay without the tariff.

Similarly, quotas are usually enacted to prevent foreign producers from flooding the domestic market with a less expensive good. Again, consumers are forced to buy the product domestically. Furthermore, quotas have to be enforced at every border. Taxpayers—who are also consumers—pay for that enforcement. In the end, the domestic consumer bears a tremendous burden in order to keep a domestic producer in business.

4.08 IN BRIEF

Keep it simple. Write a brief response to each of the following questions.

1. What is import substitution?

   _____

   _____

2. What is export promotion?

   _____

   _____

3. Which is more beneficial to the international community—import substitution or export promotion?

   _____

4. Name four challenges of economic development in lesser-developed countries:

   _____

   _____

   _____

   _____

5. Who benefits from import quotas and tariffs?

   _____

   _____

6. Who is hurt by import quotas and tariffs?

   _____

   _____

Economic Development Organizations…….....

Some organizations exist solely to promote economic growth and development, and to minimize the welfare loss that results from trade barriers.

The World Bank

The International Bank for Reconstruction and Development and the International Development Association are agencies of the United Nations. Together, they're commonly referred to as the "**World Bank**," which was established in 1944 as part of the **Bretton Woods Agreement**. Led by Paul Wolfowitz, the World Bank works to improve living conditions in the lesser-developed economies of the world. Although its headquarters are in Washington, D.C., it also has offices in more than 100 countries around the world. The World Bank is a self-proclaimed "development bank," which offers **loans, policy advice, and other assistance** to help lesser-developed economies of the world **create jobs** and **tackle poverty**.

One of the World Bank's most important strategies in its effort to promote economic development is to provide grants and **interest-free loans** to countries that otherwise could not borrow funds without paying exorbitant interest rates. In fiscal year 2004, the World Bank group provided about $9 billion in assistance and another $11 billion in loans.

Recently, the World Bank has been working on its Heavily Indebted Poor Countries (HIPC) initiative. The Bank has raised funds to grant **debt relief** to 26 countries; the countries who have received this assistance will now redirect their funds to domestic initiatives such as housing, education, healthcare, and assisting the poor.

The World Bank also takes measures to provide health education and post-disaster reconstruction and relief.

The International Monetary Fund

The **International Monetary Fund** was also created in the Bretton Woods Agreement. It describes itself as the "central institution of the international monetary system," the system that fosters the exchange of national currencies and makes global business transactions possible. It is governed by its members, some 138 countries. It is a fund in the sense that it provides temporary relief to member countries in need of financial assistance. It also advises member countries to make sound economic policy decisions, to help avoid economic crises. Most importantly, the IMF works to stabilize exchange rates and expand international trade.

4.09 IN BRIEF

The short end of the stick. Write a brief response to each of the following questions.

1. What are the two major tools of the World Bank?

   _____

   _____

2. How does the World Bank assist countries involved in its HIPC initiative?

   _____

   _____

3. What are two important objectives of the IMF?

   _____

4. What is the purpose of the "fund" in the International Monetary Fund?

   _____

   _____

5. What do the IMF and the World Bank have in common? (There are two possible answers.)

   _____

   _____

Exchange Rates.....

An **exchange rate** is the price of the currency in one country, expressed in terms of the currency in another country. If you need two dollars to buy one euro, then the exchange rate of the dollar against the euro is two dollars per euro, or one-half euro per dollar.

Exchange rates are dynamic. A currency is said to **appreciate** when its price increases, relative to the price of another currency. In the country where the currency appreciates, goods become more expensive for foreigners to buy. A currency is said to **depreciate** when its price decreases, relative to the price of another currency.

4.10 APPLYING KEY CONCEPTS

Do the math. In this exercise, you'll practice interpreting exchange rates. Write your answers in the space provided.

1. Suppose the dollar is exchanging at a rate of $2 per yen. What is the exchange rate, expressed in terms of yen per dollar?

2. A pair of shoes costs $60. Using the exchange rate in question 1, how many yen would a person in Japan have to spend to buy the shoes?

3. A shirt costs 100 yen. Using the exchange rate in question 1, how many dollars would a person in the U.S. have to spend to buy the shirt?

4. Now suppose the dollar appreciates. The new rate is $1.50 per yen. At this rate, how many yen would a person in Japan have to spend to buy the shoes in question 2?

5. At the exchange rate in question 4, how many dollars would a person in the U.S. have to spend to buy the shirt in question 3?

United States Trade.....

As you have learned, the sale of exports causes GDP to increase, and the purchase of imports causes GDP to decrease. In the interest of economic growth, the federal government tries to pursue a **favorable balance of trade**, or an excess of exports over imports. Unfortunately, the balance of trade in the U.S. has not been favorable since the late 1970s.

The U.S. exports four major categories of goods. They include technology goods, industrial materials, agricultural products, and entertainment products.

The U.S. imports four major categories of goods. They are manufactured consumer goods, oil, metals, and capital goods.

International Organizations and Trade Agreements.....

In 1947, in response to the welfare loss due to post-war era trade restrictions, 23 countries signed the **General Agreement on Tariffs and Trade (GATT)**. By signing the treaty, the member nations agreed to work to reduce trade restrictions by lowering tariffs, reducing import quotas, and treating one another fairly. Member countries held periodic trade "rounds," in which they meet to address new and ongoing issues in international trade.

In 1995, following the Uruguay "round" of GATT talks, the **World Trade Organization** was created in the permanent institution that enforces the principles of GATT. In other words, the WTO replaced the GATT.

The WTO helps to analyze economic issues in international trade and to settle disputes between participating countries. A dispute might arise if, for example, one country is forcing its citizens to pay an unfairly high price for a particular good from another country.

A **free trade association** is a group of countries that have agreed to trade freely amongst themselves. The member nations may collectively enact barriers to restrict economic actions of other (non-member) countries. Some modern free trade associations include…

…the European Union (EU), a group of European countries that have agreed to cooperate on matters of economics and policy The **euro**, a standardized currency used by many of the countries in the EU, represents this cooperation.

…the North American Free Trade Agreement (NAFTA), which includes the U.S., Canada, and Mexico

…Mercosur, which includes Brazil, Paraguay, Uruguay, Argentina, Chile and Bolivia

…the Association of Southeast Asian Nations (ASEAN), which includes Brunei, Indonesia, Malaysia, the Philippines, Singapore, Thailand, Cambodia, Laos, Myanmar and Vietnam

4.11 IN BRIEF

Use fewer words than what a picture is worth. Write a brief response to each question, below.

1. What were the three major terms of the General Agreement on Tariffs and Trade?

   _____

   _____

2. What organization administers the terms of GATT?

   _____

3. What are two of the major functions of the WTO?

   _____

   _____

4. What is a free trade association?

   _____

   _____

5. Where are the member nations of Mercosur located?

   _____

4.12 CONCLUDING COMPARISON

Different strokes for different folks. In this exercise, you'll see groups of related economic topics. In each group, one topic has been included that does not belong. In each problem, cross out the topic that does not belong and then write a brief explanation of your reasoning. (Hint: think micro vs. macro.)

	The topics:	**Your explanation:**
Ex:	*Life After God* *Shampoo Planet* ~~*Girlfriend in a Coma*~~ *Miss Wyoming*	*The group consists of books by Douglas Coupland, one of my favorite authors. Of the four*, Girlfriend in a Coma *is the only one I have not read. I plan to read it soon, though, just as soon as this DemiDec summer is over*[10]*. The others were fantastic.*

[10] I've been saying this for a few Demi-summers now. Eek. In my defense, though, I did manage to read *Microserfs*, another of Coupland's books. -Jessica

2. the circular flow of the economy
   market structure
   income elasticity of demand
   price elasticity of demand

3. gross domestic product
   gross national product
   price controls
   monetary policy

4. the policy tools of the Federal Reserve
   the Humphrey-Hawkins Act
   recession
   barriers to market entry

5. National Income Accounts
   the natural rate of unemployment
   characteristics of an oligopoly
   the velocity of money

About the Author

Jessica Raasch has a last name that rhymes with "Gosh." She studied Economics at Arizona State University after a brief musical career on the California coast. Her mother once coached the Hemet High School Academic Decathlon team, though not during her own tenure as a Decathlete there.

Jessica first joined DemiDec in 1999, by way of a nametag passed around at the California State Finals. She completed an application to DemiDec a few days later, ending it with a statement about rock stars and redheads. It made sense at the time. The following morning, Jessica opened her e-mail and found a note from DemiDec Dan himself: "Welcome aboard," it read, "—in some form or another."

In her many years with DemiDec, Jessica has made several attempts to write, in ink, about Economics. She has also been known to stop in for a quick impromptu footnoting at an awards banquet, to dedicate a workbook to "the last minute," and at one point, to convince a whole team of fans in Ohio to wear buttons that read, "I ♡ COUNTRY MUSIC" to their state competition. Unfortunately, in the past seven years, what she has not been known to do is find a new photograph to include on her DemiDec projects. The photo above was taken in 2001. Her Facebook photo is a giant question mark.

About the Editors

Dean Schaffer and **Dan Berdichevsky** have a few things in common—they competed for the same team, attended the same university and both snuck through windows—but also some key differences. For one, they weren't the same windows. For another, Dan has never crushed an alpaca, had the cast of *24* blown up in his living room, or grown a fro. Dean has never accidentally eaten an octopus burger or attempted (sort of successfully) to bribe a Croatian police officer with Korean money.

Dan founded the World Scholar's Cup; Dean competed in it. Dan eats shrimp. Shrimp kill Dean.

Dan and Dean encourage you to e-mail them at dean@demidec.com and dan@demidec.com. They are pictured here webcasting the 2007 California State Finals.

About the Lead Reviewer

Lawrence Lan doesn't usually write about himself in the third person. What he does do on a usual basis is sleep—anytime, anyplace. When he is not sleeping irregularly, Lawrence finds satisfaction in good music, freeze dried mango pieces, and *The Office*. He is an avid fan of green beans, multiculturalism, and down pillows. Stars, words, and art—in no particular order—are also among his interests. A graduate and ex-Decathlete from Palos Verdes Peninsula High School in southern California, Lawrence currently attends Cornell University in Snowyville, New York—known by the locals as Ithaca.

Answer Key

Basics of Economics

INTRODUCTION

1.01 think fast: a study of decision-making

1.02 categorization: 1. macro 2. micro 3. micro 4. macro 5. micro

THE BASIC ECONOMIC PROBLEM

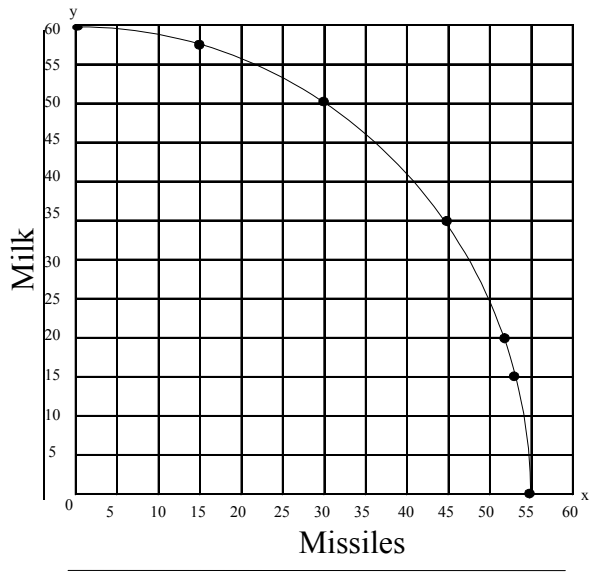
1.03 fill-in: 1. lunch 2. wants, resources 3. scarcity 4. scarce 5. air
1.04 in brief: 1. scarcity 2. because they have to deal with scarcity 3. If you give it enough thought, everything has an economic cost. 4. a resource so abundantly available to everyone that it does not seem to be limited 5. a decision to have something and to do without something else 6. the value of the next-best alternative 7. economic cost includes the accounting cost as well as other qualitative costs 8. economic cost includes qualitative costs, which are difficult to quantify
1.05 exam practice: 1. You should have underlined "trade-off" and "opportunity cost." The correct answer is a. 2. You should have underlined "opportunity cost" and "chose not to." The correct answer is d.
1.06 matching: 1. F 2. G 3. D 4. A 5. C 6. H 7. E 8. B

PRODUCTION OF GOODS AND SERVICES

1.07 true or false:

1. T
2. F – On the PPF, as production approaches a point closer to either axis, the opportunity cost of a trade-off increases.
3. T
4. F – If the PPF is a straight line with a slope of -1, the two goods concerned are very similar.
5. F – The PPF is often used to graphically represent the trade-off between the production of capital goods and the production of consumer goods.
6. T
7. T

1.08 graphing:



1.09 think fast: the law of increasing opportunity costs

1.10 case study: A: 1. d 2. b 3. c 4. e 5. a **B.** 1. 14 – 6 = 8 Flashcard Writers 2. No; the number is beyond the PPF and, therefore, unattainable 3. 17

PRODUCTIVE RESOURCES

1.11 categorization: 1. Service 2. Service 3. Good 4. Service 5. Good

1.12 categorization: 1. natural resource 2. entrepreneurial resources 3. natural resources 4. capital resources 5. human resources/human capital 6. capital resources 7. human resources 8. human resources 9. capital resources 10. natural resources 11. entrepreneurial resources 12. entrepreneurial resources 13. capital resources 14. natural resources 15. capital resources

1.13 exam practice : ~~land~~, ~~capital~~, ~~entrepreneurship~~, ~~labor~~. The correct answer is c.

1.14 true or false:

1. F - As factors of production, education and training are considered human capital.
2. F – The basic problem of economics is scarcity.
3. T
4. F- The four factors of production are natural resources, capital resources, human resources, and entrepreneurial resources.
5. T
6. F - In the language of economics, production is something that creates wealth.
7. F- "TANSTAAFL" means, "There ain't no such thing as a free lunch."
8. T

1.15 matching:

1. a, b, d, g, i 2. e, f, j 3. c 4. h

1.16 sentence completion: 1. outward 2. trade-off 3. inward

1.17 matching:

1. c 2. d 3. a 4. b

PRESENT, FUTURE, INTENDED, AND UNINTENDED CONSEQUENCES

1.18 in brief: 1. the immediate consequence of a decision, the consequence that will happen in the present 2. the consequence that happens further in the future than the present consequence(s) 3. the desired consequence, the reason a decision is made 4. the consequence not desired 5. If the future consequences will happen after his term has ended, or after he is re-elected, then he might only concern himself with the present consequences. 6. The intended consequences might outweigh the unintended consequences, or the unintended consequences might be expected to occur far enough in the future that someone else will have to deal with them.

1.19 applying key concepts: problem: Demilonians can't afford to live. *solution:* limit the rent a landlord may charge *intended consequence:* people can afford to live *unintended consequence:* landlords lose their incentive to maintain the properties, and allow the buildings to fall apart; the only affordable housing is home to drug dealers *present consequence:* people can afford to live *future consequence:* the buildings fall apart, and the only affordable housing is home to drug dealers

EFFECTIVE DECISION-MAKING

1.20 think fast: we weigh the benefits of an alternative against the costs

MARGINAL BENEFITS AND MARGINAL COSTS

1.21 applying key concepts: 1. 79 cents, or a few ounces of fries and soda 2. a few bucks 3. proximity to snow

1.22 think fast: the difference between two alternatives

1.23 case study: 1. nine more 2. 149 3. a sunk cost

1.24 applying key concepts: 1. three more 2. one more; as long as marginal benefit is greater than marginal cost, production should continue

1.25 case study: 1. a highlighter 2. two espresso drinks, then a cup of ice cream

INDIVIDUAL AND SOCIAL GOALS

1.26 categorization

1. N 2. P 3. N 4. P 5. P

1.27 exam practice: You should have underlined ought. You should have placed an asterisk by "*If the price increases, then the quantity demanded will increase.*" The correct answer is c.

1.28 in brief: 1. the process of performing an activity in the way that best fulfills the goal of the activity 2. by shopping for the best value

THE BASIC ECONOMIC QUESTIONS

1.29 categorization: 1. what 2. how 3. what 4. who 5. how 6. how

ECONOMIC SYSTEMS AND THEIR CHARACTERISTICS

1.30 in brief: 1. competition 2. because a central authority works to fulfill an economic plan 3. a mixed market system 4. individuals own all the resources, goods, and services

1.31 categorization:

1. Command 2. Market 3. Command, Mixed 4. Mixed, Market 5. Mixed, Market
6. Mixed, Market 7. Market 8. Mixed 9. Mixed, Market 10. Command, Mixed

11. Mixed 12. Mixed, Market 13. Mixed, Market 14. Command 15. Market

1.32 charting:

How are the fundamental economic questions answered?		FUNDAMENTAL QUESTIONS		
		What to produce?	**How to produce?**	**For whom to produce?**
ECONOMIC SYSTEMS	**MARKET**	resource owners produce the goods and services they expect to be most profitable	resource owners invest in the methods of production that yield the greatest profit	the price system allocates resources
	COMMAND	a central authority decides what to produce	a central authority decides how resources will be used for production	a central authority controls the allocation of goods and services
	MIXED MARKET	resource owners produce the goods and services they expect to be most profitable, but the government provides some socially necessary goods	resource owners invest in the methods of production that yield the greatest profit, but markets are regulated so that methods of production are not detrimental to the consumer or to the environment	the price system allocates most goods and services, but government redistributes income

1.33 true or false: 1. F: The pure market economic system is the most competitive market structure. 2. T 3. F – The FDA is one example of how a government agency can intervene to protect consumers from market failures. 4. F- In a pure market economy, national security would not exist, because no one could sell it for a profit. 5. T

1.34 comparison: 1. ~~command system~~: all the others are interchangeable terms. 2. ~~central planning~~: the others are characteristics of a market economy 3. ~~central control of resources~~: the others are elements of a mixed economic system. In the mixed market system in the U.S., there is central planning, but not central control. Most resources, goods, and services are privately owned. 4. ~~no rights to intellectual property~~: the others are characteristics of a mixed market system. 5. ~~regulated markets~~: the others are characteristics of a pure market system. 5. ~~mixed market~~: the others do not exist in the real world.

1.35 in brief: 1. Although there is substantial investment into the development of nuclear arms technology, the people are starving, and most of the country is living in economic despair. 2. North Korea 3. China's economic growth has quadrupled, and China has become a hot-spot for foreign investment. 4. The government controls the exchange rate of two different types of currency (there are other ways of maintaining control, too, of course). 5. India has established high tariffs and stiff restrictions on trade to deter foreign investment. 6. The U.S.

1.36 exam practice: 1. You should have crossed out "government," "tradition," "households," and "churches." The correct answer is e. 2. You should have underlined "central planning." The correct answer is b.

RESPONSES TO INCENTIVES

1.37 categorization:

1. negative – *If he didn't quit, he would have lost the additional money he would have had to pay in taxes.*
2. non-monetary – *Ned gave up his car for the intrinsic reward of being a good friend.*
3. positive – *By keeping her grades up, Celia gained a free education.*
4. positive – *By undergoing the procedure, Earl could gain a cure.*
5. monetary – *Roxanne opts for the cheaper bottles only to save money.*
6. positive – *Easton is careful because he gains the intrinsic reward of feeling good about how he does his job.*

1.38 in brief: 1. anything that will motivate a person to do something 2. something that offers a positive amount of utility 3. something that offers a negative amount of utility 4. predictably 5. people have different values that influence their decision-making 6. we assume people are self-interested, which means they look out for their own best interests (if we assumed they were selfish, that would mean they ONLY look out for themselves)

VOLUNTARY EXCHANGE

1.39 matching:

1. d 2. e 3. c 4. a 5. h 6. g 7. f 8. b

1.40 in brief: 1. both parties must expect to gain and there must be a coincidence of wants 2. they develop some form of money system 3. they bring buyers and sellers together to make exchanges

1.41 exam practice: You should have crossed out "~~A double coincidence of wants must exist~~." You should have underlined "voluntary exchange" and "All participating parties must expect to gain." You should have circled "b."

SPECIALIZATION

1.42 key terms: 1. the act of focusing on completing a particular task or producing a particular good or service
2. the act of separating the production process into isolated tasks

1.43 in brief: 1. those who specialize can make exchanges to get the things they need, rather than produce them

2. division of labor 3. it enables us to maximize our use of scarce resources 4. interdependence is risky

Microeconomics

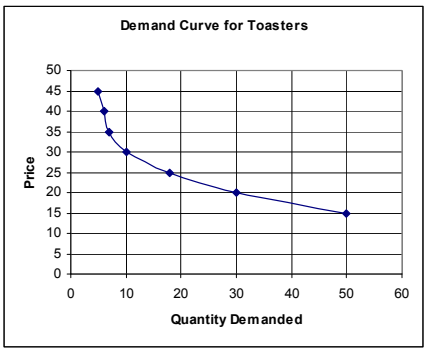
MARKETS

2.01 in brief: 1. Goods and services only go to those who can afford to pay the market price for them. 2. A market exists wherever buyers and sellers interact.

DEMAND

2.02 fill-in: 1. law of demand, decreases 2. increases 3. curve, point on the curve

2.03 applying key concepts:

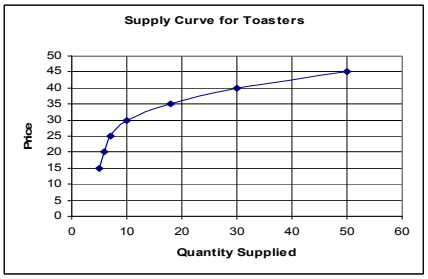


2.04 fill in: 1. demand 2. quantity demanded 3. quantity demanded 4. demand 5. quantity demanded 6. quantity demanded 7. demand, quantity demanded

SUPPLY

2.05 sentence completion: 1. supply, positively 2. falls 3. curve, point on a curve 4. right, positive

2.06 applying key concepts:



CHANGES IN SUPPLY & DEMAND

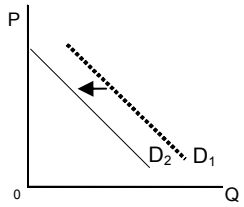
2.07 categorization:

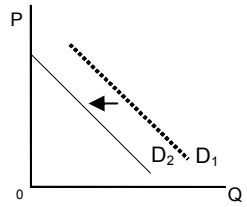
1. *answer:* ~~price drops~~
   explanation: all affect demand, but a price change affects quantity demanded.
2. *answer:* ~~the price of a complementary good increases~~
   explanation: all result in an increase in demand, but when the price of a complementary good increases, demand decreases.
3. *answer:* ~~change in price~~
   explanation: a price change does not affect demand, but quantity demanded.
4. *answer:* ~~change in price~~
   explanation: a price change does not affect demand, but quantity demanded.

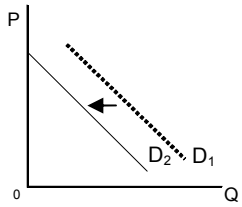
2.08 categorization: 1. ↑ 2. ↓ 3. ↑ 4. ↓

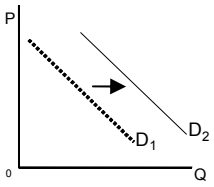
2.09 in brief: 1. the quantities of a good or service that consumers are willing and able to buy at any given price. 2. the quantity of a good or service that consumers are willing to buy at a given price 3. the income effect, the substitution effect 4. the price of a good and the demand for its substitute are *directly* related; as the price of one good rises, the demand for a substitute also rises. 5. the price of a good and the demand for its complement are inversely related; as the price of a good rises, the demand for its complements will fall.

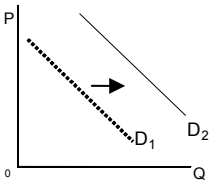
2.10 applying key concepts:

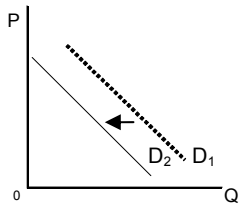
1. 

2. 

3. 

4. 

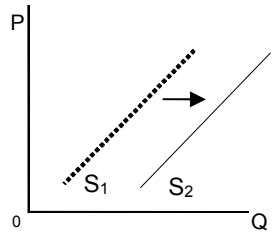
5. 

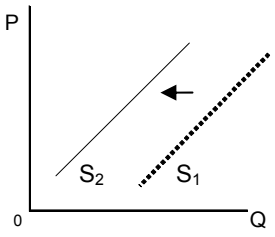
6. 

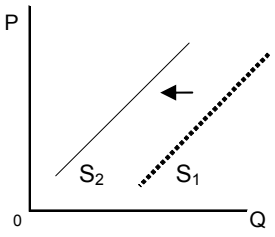
2.11 in brief: 1. the quantities of a good or service that producers are willing and able to produce and make available for sale at each possible price 2. the quantity of a good or service that producers are willing and able to produce and make available for sale at a given price 3. positively

2.12 categorization: 1.↑ 2.↓ 3.↓ 4.↑ 5.↑ 6.↑ 7.↓ 8.↓ 9.↑ 10.↓

2.13 applying key concepts:

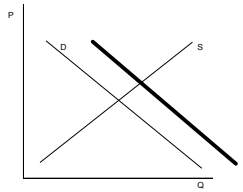
1. 

2. 

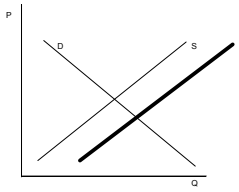
3. 

MARKET EQUILIBRIUM

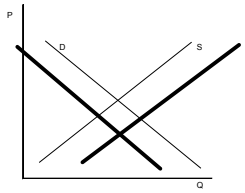
2.14 applying key concepts:

1. 

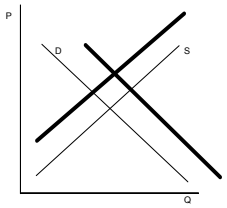
yes, increases, increases

2. 

yes, increases, decreases

3. 

yes, indeterminate, decreases

4. 

yes, indeterminate, increases

2.15 categorization:

Changes in Equilibrium	**nc supply**	**↑ supply**	**↓ supply**
nc demand	*no change* *no change*	**P ↓** **Q↑**	**P ↑** **Q ↓**
↑demand	**P ↑** **Q ↑**	**P ?** **Q ↑**	**P ↑** **Q ?**
↓ demand	***P*↓** ***Q*↓**	**P ↓** **Q ?**	**P ?** **Q ↓**

2.16 in brief: 1. quantity supplied is less than quantity demanded; the result is a shortage 2. quantity supplied is above quantity demanded; the result is a surplus 3. always as a difference between quantity supplied and quantity demanded

2.17 fill-in: 1.q2,q4 2.q3, q3 3.q5, q1 4. surplus, q4 – q2 5. shortage, q5 – q1 6. market equilibrium

2.18 applying key concepts: 1. price floor, surplus, q4 – q2 2. price ceiling, shortage, q5 – q1 3. price floor, p3

2.19 sentence completion: 1. minimum, above 2. maximum, below 3. surplus 4. shortage

UTILITY & INCOME

2.20 in brief: 1. curve B; It sits further away from the origin than curve A. 2. Points A and B; Point C 3. The satisfaction gained from consuming a good or service.

2.21 applying key concepts: 1. s 2. r 3. no 4. no 5. "r" offers less utility than q, and both points fall on the budget line 6. q

ELASTICITY

2.22 sentence completion: 1. elastic 2. inelastic 3. unit elastic 4. responsiveness 5. cause, effect 6. how responsive x is to incremental changes in y

2.23 applying key concepts: 1. a. 10 b. 55 c. 5 d. 12.5 e. 45.5% 2. a. -20 b. 90 c. 2 d. 29 e. 322%

2.24 categorization: 1. e 2. u 3. i 4. i 5. i 6. e 7. e 8. i 9. e 10. e

2.25 word bank: 1. unit elastic 2. elastic 3. inelastic, inferior 4. inelastic 5. unit elastic, normal 6. substitutes 7. independent 8. complements 9. substitutes 10. inferior 11. normal 12. elastic 13. inelastic

2.26 in brief: 1. the two goods are substitutes 2. the two goods are complements 3. the two goods are independent 4. how responsive X is to incremental changes in Y 5. how responsive demand is to incremental changes in consumer income 6. how responsive quantity demanded is to incremental changes in price 7. luxury goods 8. inferior goods

2.27 categorization: 1. ↓ 2. ↑ 3. ↓ 4. ↑ 5. ↓ 6. ↑ 7. ↑ 8. ↑

2.28 listing: (in no particular order) the availability of substitutes, the price of a good as a proportion of consumer income, and time

2.29 sentence completion: 1. price-elastic 2. price-inelastic, price-elastic 3. less 4. price-elastic 5. less

MARKET STRUCTURES

2.30 in brief: 1. a large number of each 2. there are no barriers to entry or exit 3. demand is perfectly price elastic 4. the product is homogenous 5. everyone has free and equal access to information about everything 6. The seller is a price taker. The seller must sell at the market price.

2.31 in brief: 1. a large number of each 2. fairly easy; there are few barriers to entry or exit 3.. the products are very similar, but each seller tries to capture market power by differentiating his product 4. branding and advertising

2.32 categorization:

1.	MC	2.	PC	3.	MC	4.	PC	5.	MC
6.	PC & MC	7.	MC	8.	PC	9.	PC & MC	10.	PC
11.	MC	12.	PC	13.	PC	14.	MC	15.	PC

2.33 in brief: 1. typically, only a few sellers but a large number of buyers 2. very difficult; the barrier to entry are very high 3. the products are homogenous or only slightly differentiated 4. each seller has to sell at the price at which other sellers are selling; there is little price movement in an oligopoly 5. to try to maintain the oligopoly 6. collusion; pressuring legislators to regulate firms in the industry such that regulations are too difficult for a new entrant to satisfy

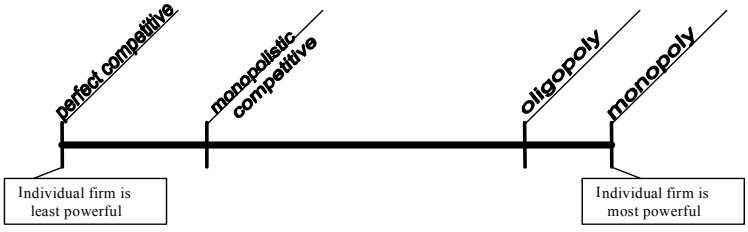
2.34 matching:

1.	l	2.	a	3.	j	4.	b	5.	c
6.	g	7.	f	8.	d	9.	i	10.	h
11.	k	12.	e						

2.35 in brief: 1. there is only one seller, but a large number of buyers 2. technically, a new seller can't enter, because the market would no longer be a monopoly 3. a firm can set its price however high or low it chooses, in the interest of maximizing profit; there is no competition and so there are no available substitutes 4. a monopoly firm aims to keep the market to itself, to maintain the monopoly 5. X-inefficiency, welfare loss due to monopoly, contrived scarcity

2.36 categorization: 1.mc 2.pc 3.o 4.mc 5.pc 6.o 7.mc 8.o 9.m 10.pc 11.mc 12.m 13.mc 14.mc 15.o

2.37 applying key concepts:



2.38 matching:

1.	c	2.	f	3.	a	4.	j	5.	g
6.	h	7.	e	8.	b	9.	d		

PRODUCTION DECISIONS

2.39 categorization:

1.	f	2.	f	3.	v	4.	f	5.	f
6.	f	7.	f	8.	v	9.	v	10.	f

2.40 in brief: 1. The firm supplies the quantity at which its marginal cost is equal to the market price, or marginal revenue. 2. The only costs the firm can control are variable. The firm controls them by limiting production volume. 3. If ATC =MR, then the firm will earn 0 profit, (since profit = MR-ATC=0).

INSTITUTIONS OF A MARKET ECONOMY

2.41 in brief: 1. it can be an organization, a relationship, or a practice 2. the institutions of a market economy help individuals and groups to reach their social and economic goals 3. an institution that borrows money from people who have saved it and lends money to people who need it 4. a financial intermediary into which people deposit funds in return for interest, or pay interest to borrow funds 5. an institution that accepts deposits and makes loans 6. by accepting deposits 7. by earning more interest on the loans it makes than what it pays for the use of the funds it borrows 8. a financial intermediary that accepts periodic payments in return for benefits and invests collected funds to earn interest 9. in the form of periodic premiums 10. by earning more in interest (or collecting more in premiums) than what it has to pay in benefits

2.42 categorization:

1. D	2. CS	3. D	4. D
5. CS	6. CS	7. D	

2.43 think fast: financial intermediaries

LABOR UNIONS

2.44 matching:

1. b	2. c	3. f	4. a
5. d	6. h	7. g	8. e

2.45 in brief: 1. public employees' union 2. craft union 3. industrial union

PROPERTY RIGHTS

2.46 categorization:

1. public	2. private	3. public	4. private
5. public			

2.47 in brief: 1. If people believe that their rights to private property will be protected, then they will make decisions in the interest of improving their property or accumulating more of it. 2. the Fifth Amendment 3. Self-interested, private individuals cannot be expected to fairly allocate public goods 4. All three specifically protect a certain kind of private property (intellectual property).

2.48 true or false:

1. F – Free riders are people who use <u>public</u> goods without helping to pay for them.
2. F – Original works of authorship, such as music and literature, are protected by the <u>copyright</u> system.
3. T
4. T
5. F – According to the Fifth Amendment, a person <u>cannot</u> be denied private property <u>unless</u> the legal system <u>can</u> justify taking it away.

INCOME

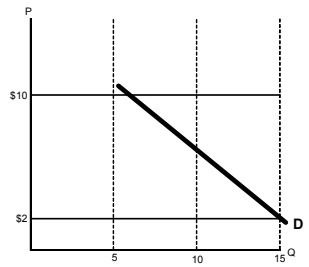
2.49 categorization: 1. R, W, P 2. P, I

2.50 in brief: 1. the value of the resource sold 2. hourly wages, salary payments, and tips 3. the laborer's skill and ability and the market value of the final good or service he produces

FACTOR MARKETS

2.51 applying key concepts:

1. 3 + 4 + 3 + 5 = 15
2. 1 + 1 + 1 + 3 = 6
3.



2.52 in brief: 1. a market in which any factor of production is sold 2. firms demand the resource; households supply it 3. the demand for a factor is derived from the demand for the final goods and services it is used to produce

LABOR MARKET

2.53 matching:

1.	h	2.	f	3.	c	4.	i	5.	g
6.	a	7.	b	8.	d	9.	e	10.	j

2.54 key terms: the price paid in exchange for one labor hour

2.55 in brief: 1. households supply laborers, who supply labor hours; firms demand labor hours 2. the wage rate 3. labor hours hired 4. workers become less efficient as they work more hours; also, until a firm increases its productive capacity, it can only use so much labor 5. the substitution effect, the scale effect, the diminishing marginal productivity of labor

HUMAN CAPITAL DEVELOPMENT & LABOR PRODUCTIVITY

2.56 case study:

1. $\frac{\text{4 bedrooms}}{\text{2 men x 3 hours}} = \frac{\text{4 bedrooms}}{\text{6 labor hours}} = \frac{\text{2/3 bedrooms}}{\text{labor hour}}$

2. $\frac{\text{64 cassettes}}{\text{1 hour x 2 men x 2 VCRs per man}} = \frac{\text{64 cassettes}}{\text{4 VCR hours}} = \frac{\text{16 cassettes}}{\text{VCR hour}}$

$\frac{\text{64 cassettes}}{\text{1 hour x 2 teaching assistants}} = \frac{\text{64 cassettes}}{\text{2 teaching hours}} = \frac{\text{32 cassettes}}{\text{teaching hour}}$

3. $\frac{\text{118 toys picked up}}{\text{2 hours x 1 father}} = \frac{\text{118 toys picked up}}{\text{2 father-hours}} = \frac{\text{59 toys picked up}}{\text{father-hour}}$

2.57 in brief: 1. productivity is a measure of the efficiency of the production process 2. labor productivity 3. investing in physical capital and investing in human capital

EDUCATION & OTHER FACTORS THAT INFLUENCE INCOME

2.58 true or false:

1. T
2. F – Education has the most predictable effect on lifetime earnings.
3. F – Some economists believe that people who are well-educated tend to be well-paid because education improves labor productivity. Others suggest that education merely acts as a screening device.
4. F – Females who live alone have the lowest average income of any household type.
5. T
6. F – By region, the lowest median household income is found in the South.
7. F – When workers invest in their education, they are investing in their own human capital.
8. T

2.59 categorization:

1.	A	2.	A	3.	A	4.	A	5.	B
6.	B	7.	A	8.	A	9.	B	10.	A
11.	B	12.	B	13.	B	14.	B	15.	A
16.	A	17.	A	18.	B	19.	B	20.	B

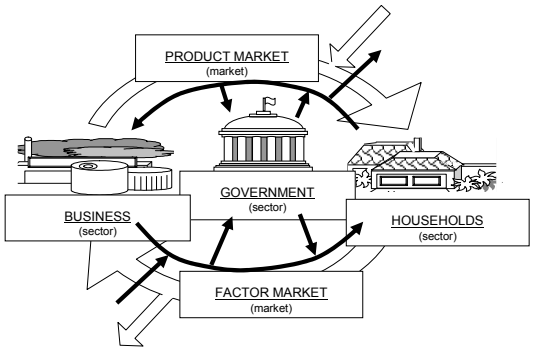
2.60 listing: *(in no particular order)* education, household type, region, job type, race, gender

2.61 in brief: 1. Some economists believe that employers assume that a person who has a college education must already possess the qualities of a desirable new employee. 2. Not exactly; the Equal Pay Act was intended to close the income gap between races and genders. After forty years, the gap is closing at a rate of less than one penny per year.

Macroeconomics

THE CIRCULAR FLOW, GROSS DOMESTIC PRODUCT, & NATIONAL INCOME

3.01 diagramming:



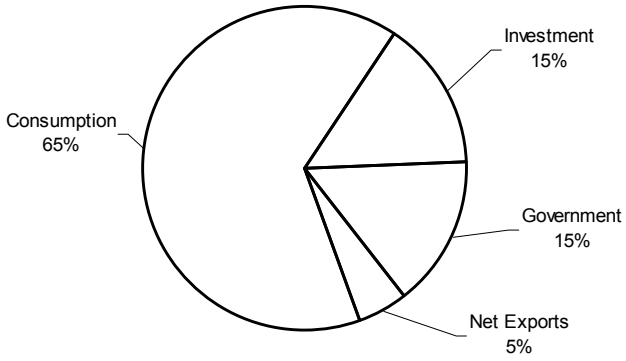
3.02 in brief: 1. household sector 2. business sector 3. household sector 4. government sector 5. counterclockwise 6. business sector 7. supply creates its own demand

3.03 applying key concepts: 1. lemons and sugar 2. Stan's Totally Incredibly Lemony Lemonade 3. no, no, yes; after the coaches buy them, they will not be sold again.

3.04 matching: 1. c 2. a 3. e 4. b 5. d

3.05 categorization: 1. GNP – France, GDP – United States, 2. GNP – Iraq, GDP – Egypt, 3. GNP – United States, GDP – United States, 4. GNP – Germany, GDP – Greece

3.06 charting:



3.07 fill-in: 1. consumption, net exports, expenditures 2. depreciation, indirect taxes 3. GDP 4. externalities, non-market activities

3.08 categorization:

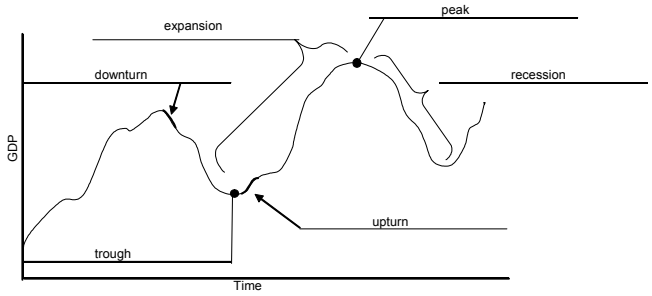
1. *answer:* ~~rent~~
   explanation: All are used to calculate GDP with the expenditures approach. Rent is not.
2. *answer:* ~~indirect taxes~~
   explanation: In the income approach to GDP calculation, indirect taxes are subtracted to arrive at the total. The others are added.
3. *answer:* ~~government spending~~
   explanation: The group consists of problems with GDP measurement. Government spending, if reported correctly, is not difficult to measure.
4. *answer:* ~~quality changes~~
   explanation: I, C, & N are part of the expenditures approach to GDP calculation. The measurement of quality changes is a problem with the accuracy of GDP measurement.
5. *answer:* ~~Y~~
   explanation: In the equation for GDP from the expenditures approach, C, G, and X are added to arrive at GDP. Y is excluded because it *is* GDP in that equation.
6. *answer:* ~~externalities~~
   explanation: Value added, income, and expenditures are three different approaches to calculating GDP. A problem with GDP measurement is that it does not include the value of externalities.
7. *answer:* ~~subsidies~~
   explanation: The group consists of problems with GDP measurement. Subsidies are easily measured, but they must be subtracted from the income approach equation.
8. *answer:* ~~final goods~~
   explanation: The group consists of things that are not included in GDP. Final goods are certainly included in GDP.

3.09 in brief: 1. double-counting occurs when goods or services are included twice in GDP measurement 2. GDP is a measure of productivity, which is only one aspect of the quality of life in an economy. Therefore GDP per capita doesn't reveal everything about the quality of life for the people of an economy. 3. It is difficult to determine whether a price increase is the result of an increase in

quality. If it is, then the increase should be reflected in GDP. If the seller simply raised price to make a profit, productivity did not actually increase, so the change should not be included in GDP.

ECONOMIC GROWTH

3.10 diagramming:



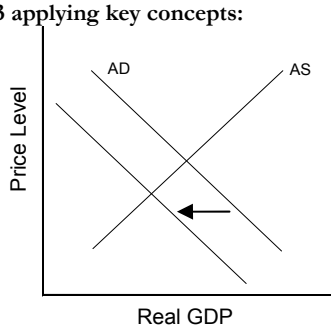
3.11 true or false:

1. F – A recession is a sustained decrease in business activity, lasting at least <u>two</u> consecutive quarters.
2. T
3. F – By definition, economic growth is a sustained increase in an economy's <u>capacity to produce.</u>
4. T
5. T

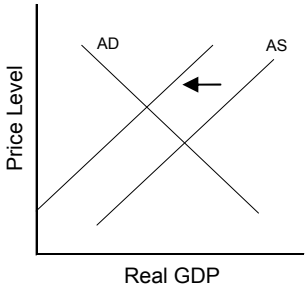
3.12 categorization: 1. depression 2. expansion 3. expansion 4. recession 5. expansion 6. recession 7. expansion 8. recession 9. expansion

AGGREGATE SUPPLY & AGGREGATE DEMAND

3.13 applying key concepts:



1.



2.

UNEMPLOYMENT

3.14 categorization:

1.	in	2.	out	3.	out	4.	in	5.	out

3.15 more categorization:

1.	b	2.	c	3.	a	4.	c	5.	b

6. c

3.16 fill-in: 1. unemployed, employed 2. #unemployed, # in labor force 3. # Females in the labor force, # females

3.17 applying key concepts:

1. a. 30,000 + 20,000 + 5,000 + 5,000 = 60,000
b. 30,000 + 20,000 = 50,000
c. 5,000 + 5,000 = 10,000
d. 10,000 / 60,000) x 100% = 16.7%
e. (50,000 / 60,000) x 100% = 83.3% OR 100% - 16.7% = 83.3%
f. [(20,000 + 5,000) / 60,000] x 100% = 33.3%
2. a. 10,000 + 18,000 + 1,500 + 500 = 30,000
b. 10,000 + 18,000 = 28,000
c. 1,500 + 500 = 2,000
d. (2,000 / 30,000) = 6.7%
e. (28,000 / 30,000) x 100% = 93.3%
f. [(10,000 + 1,500) / 30,000] x 100% = 38.3%

3.18 categorization: 1. structural 2. frictional 3. cyclical 4. cyclical 5. structural 6. seasonal

3.19 sentence completion: 1. overstate 2. understate 3. understate 4. understate, does not 5. overstate 6. overstate

3.20 listing: 1. structural, cyclical, frictional, seasonal 2. partially-employed people, underemployed people, discouraged workers 3. teenagers are included, dual-income families take longer, the effect of unemployment compensation, unrealistic expectations of new college grads

3.21 sentence completion: 1. more 2. more 3. more

MONEY

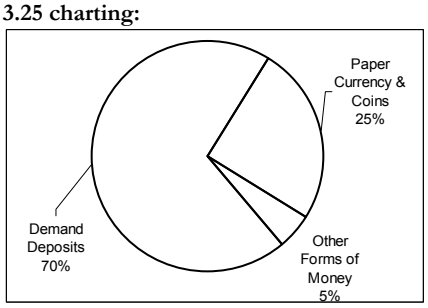
3.22 true or false:

1. F – Silver is an example of commodity money.
2. F – Fiat money has no intrinsic value.
3. T
4. F – Good money must be durable, scarce, and easy to transport.
5. T

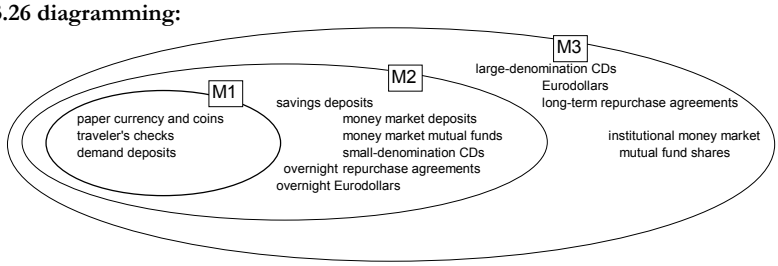
3.23 categorization: 1. unit of account 2. store of value 3. unit of account

3.24 fill-in: 1. ease of transport 2. scarcity 3. durability 4. durable 5. easier to transport 6. durable, scarce

3.25 charting:



3.26 diagramming:



3.27 categorization:

1. *answer:* ~~overnight Eurodollars~~
   explanation: All are components of M1, except overnight Eurodollars.
2. *answer:* ~~measure of wealth~~
   explanation: The other three are the functions of money.
3. *answer:* ~~accountability~~
   explanation: The others are the essential physical properties of money.
4. *answer:* ~~government securities~~
   explanation: All are components of M3. Government securities are exclusively a component of L.
5. *answer:* ~~includes long-term repurchase agreements~~
   explanation: The others are all true of M2. While it is true that M3 "includes long-term repurchase agreements," that is not true of M2.
6. *answer:* ~~most liquid money aggregate~~
   explanation: The others may all be said of L. L is "the least liquid money aggregate," not the most liquid.

3.28 matching:

1. l	2. d	3. h	4. a	5. j
6. b	7. g	8. f	9. c	10. e
11. i	12. k			

3.29 listing: 1. trading, borrowing, saving, investing, comparing the relative value of goods and services 2. medium of exchange, store of value, unit of account 3. durability, portability, scarcity, divisibility 4. paper currency, coins, demand deposits, traveler's checks 5. savings deposits, money market deposit accounts, money market mutual fund shares, small-denomination CDs, overnight repurchase agreements, overnight Eurodollars
6. large-denomination CDs, long-term repurchase agreements, Eurodollars, institutional money market mutual fund shares

INFLATION

3.30 word bank:1. menu cost 2. hyperinflation 3. hidden tax 4. price stability 5. cost-push 6. base year 7. demand-pull 8. inflation 9. shoe leather 10. deflation 11. price level 12. planning cost 13. sticky prices 14. debtor, creditor

3.31 key terms: 1. accelerating inflation 2. constant inflation 3. hyperinflation (accelerating inflation *is also correct)*
4. disinflation 5. deflation

CONSUMER PRICE INDEX

3.32 in brief: 1. 60% 2. 77%

3.33 matching:

1.	k	2.	m	3.	o	4.	l	5.	j	6.	q	7.	g	8.	h
9.	n	10.	b	11.	i	12.	e	13.	c	14.	p	15.	d	16.	a
17.	f														

3.34 applying key concepts: 1. (163.0 – 160.5) / 160.5 x 100% = 1.6% 2. (166.6 – 163.0) / 163.0 x 100% = 2.2%
3. (172.2 – 166.6) / 166.6 x 100% = 3.4%

MACROECONOMIC GOALS

3.35 in brief: 1. an increase in an economy's capacity to produce 2. to have 4% unemployment 3. to have moderate inflation, approximately equal to the rate at which productivity is increasing 4. the Humphrey-Hawkins Act

3.36 word search.

A	B	E	F	J	H	A	S	D	F	W	E	R	T
L	C	P	R	I	C	E	I	N	D	E	X	I	Y
I	D	M	A	R	K	E	T	B	A	S	K	E	T
Q	O	I	E	Y	A	R	J	G	D	F	U	O	P
U	P	V	X	N	E	A	K	V	C	R	T	U	I
I	K	R	O	Q	U	E	O	I	P	B	I	E	A
D	S	E	C	O	G	Y	M	E	Y	H	J	G	F
I	S	C	I	N	T	E	N	T	M	S	K	D	H
T	I	S	U	M	O	S	P	N	L	A	B	I	C
Y	T	I	L	I	B	A	T	S	E	C	I	R	P
T	A	U	V	E	W	B	X	Y	I	Z	A	O	K
E	M	P	L	O	Y	M	E	N	T	A	C	T	U

3.37 categorization: 1. ↑ 2. ↑ 3. ↓ 4. ↑ 5. ↓ 6. ↓ 7. ↑ 8. ↑

3.38 matching: 1. c 2. a 3. d 4. b

FISCAL POLICY OPTIONS

3.39 in brief: 1. Fiscal policy aims to moderate the business cycle through taxes, government spending, transfer payments, and borrowing. Monetary policy aims to influence aggregate economic activity by controlling the money supply. 2. automatic stabilizers, discretionary fiscal policy 3. An automatic stabilizer is an item built into the federal budget to automatically moderate the business cycle. 4. federal taxes, unemployment compensation 5. Discretionary fiscal policy requires manipulating the revenues and expenditures in the federal budget to influence aggregate economic behavior. 6. increase in spending, decrease in taxes 7. aggregate demand will increase 8. consumers will have more disposable income and so aggregate demand will be stimulated 9. expansionary fiscal policy specifically targets aggregate demand to bring the economy out of recession.

3.40 applying key concepts: 1. ↑ 2. ↑ 3. ↑ 4. ↑ (since aggregate demand would decrease)

INTEREST RATES

3.41 sentence completion: 1. annual 2. real 3. prime 4. decrease

3.42 word bank: 1. save 2. borrow 3. investment 4. savings 5. demanded 6. supplied 7. real

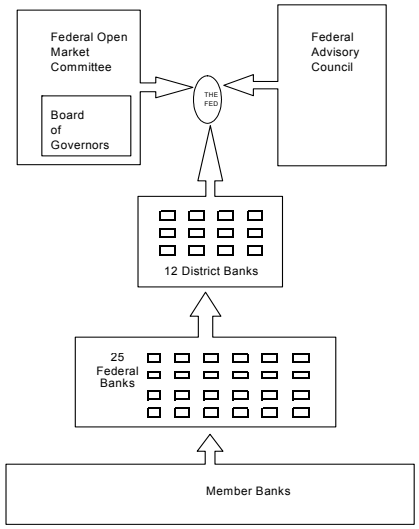
3.43 in brief: 1. price stability, full employment, increase of productivity 2. interest rates 3. interest

THE FEDERAL RESERVE SYSTEM

3.44 fill-in:

1. seven	2. 25	3. 12	4. four, 14	5. 12
6. one	7. four	8. 12	9. 12	10. five

3.45 diagramming:



3.46 applying key concepts:

1.	10	2.	5	3.	3	4.	4	5.	2
6.	10%	7.	33 1/3 %	8.	20%	9.	$4000	10.	$3000

TOOLS OF THE FEDERAL RESERVE

3.47 in brief: 1. any action to manipulate the money supply in order to influence the health of the economy 2. open market operations, raising or lowering the discount rate, raising or lowering the reserve ratio 3. the buying and selling of government securities 4. the interest rate the Federal Reserve charges when it lends money to banks 5. open market operations

3.48 applying key concepts: 1. ↓ 2. ↓ 3. ↓ 4. ↑ 5. ↑ 6. ↑ 7. ↓ 8. ↑ 9. ↑ 10. ↓ 11. ↑ 12. ↑ 13. ↓ 14. ↓

THE FEDERAL BUDGET

3.49 categorization:

1.	D	2.	D	3.	D	4.	M	5.	D
6.	M	7.	D	8.	D	9.	M	10.	M
11.	M	12.	M	13.	D	14.	M	15.	D

3.50 matching: 1. i 2. h 3. k 4. e 5. f 6. b 7. g 8. d 9. l 10. a 11. j 12. c

International Trade and Global Economic Development

BASICS OF TRADE

4.01 sentence completion: 1. quota 2. deficit 3. imports 4. embargo 5. quota 6. favorable 7. surplus 8. more 9. embargo 10. unattainable

4.02 matching:

1. h 2. c 3. i 4. g 5. a 6. b 7. d 8. j 9. e 10. f

ABSOLUTE AND COMPARATIVE ADVANTAGE

4.03 applying key concepts:

1. 5 units of milk
2. 75 units of clothing
3. 10 units of toothbrushes
4. 20 units of grain
5. 2 units of food

4.04 in brief: 1. Mexico. 2. Decalon 3. Spain 4. Peru (If the relative price of a pound of beef is 30 potatoes, then the relative price of a potato is 1/30 lb. of beef in Peru. In Spain, the relative price of a potato is 1/3 pound of beef.)

4.05 applying key concepts: 1. a. 3 pieces of clothing b. 3/5 pieces of clothing c. 1/3 car d. 5/3 cars e. Germany f. Germany g. U.S. h. U.S. 2. a. 5 pounds of fish b. ½ pound of fish c. 1/5 pound of cheese d. 2 pounds of cheese e. France f. France g. Japan h. Japan

4.06 in brief: 1. absolute advantage 2. Country A should specialize in the good in which it has a comparative advantage. 3. Although the country has an absolute advantage, if its relative price of either good is <u>different</u> from the relative prices in another country, then both countries stand to benefit from trade.

4.07 case study:

1. 50 2. 25 3. 600 4. 300 5. yes

ECONOMIC GROWTH AND DEVELOPMENT

4.08 in brief: 1. when a country begins to produce the goods it once imported, in an effort to decrease its dependence on other nations. 2. when a country purposefully begins producing and exporting the goods that other countries need. 3. probably export promotion 4. inadequate natural resources, an unfit workforce, insufficient capital equipment, and a government that either won't or can't help promote economic development 5. the domestic producers of the restricted goods 6. consumers

4.09 in brief: 1. loans (or financial assistance) and policy advice 2. It grants them debt relief; in turn, they invest in education, healthcare, and other initiatives. 3. to stabilize exchange rates and to expand international trade 4. to provide temporary financial assistance to member countries 5. Both entities work to improve world conditions for international trade; or, they were both established at the Bretton Woods Conference

4.10 applying key concepts: 1. ½ yen per dollar 2. \$60 x (0.5 yen / \$1) = 30 yen 3. 100 yen x (\$2 / 1 yen) = \$200 4. \$60 x (.67 yen/ \$1) = 40 yen 5. 100 yen x (\$1.50 / 1 yen) = \$150

INTERNATIONAL ORGANIZATIONS AND TRADE AGREEMENTS

4.11 in brief: 1. to reduce tariffs, to lower quotas, and to treat member nations fairly 2. the World Trade Organization 3. to help analyze economic issues and to settle disputes between participating nations 4. a group of nations that freely trade among themselves but may establish trade barriers for other countries 5. South America

CONCLUDING COMPARISON

4.12 concluding comparison: 1. ~~the circular flow of the economy~~: The circular flow is a "macro" issue; the others are "micro." 2. ~~price controls~~: Price controls are a micro issue because they affect individual markets or industries. All the others are "macro" issues. 3. ~~barriers to market entry~~: All are "macro" issues, but the "barriers" refer to entry into an individual market. The Humphrey-Hawkins Act obligates Congress to pursue economic prosperity. Even if you didn't know this, you could have guessed that any bit of legislation might result in a policy change, which means it would fall under "macro." 4. ~~characteristics of an oligopoly~~: All are macro issues, but the "characteristics" refer to an individual market (which happens to be an oligopoly).