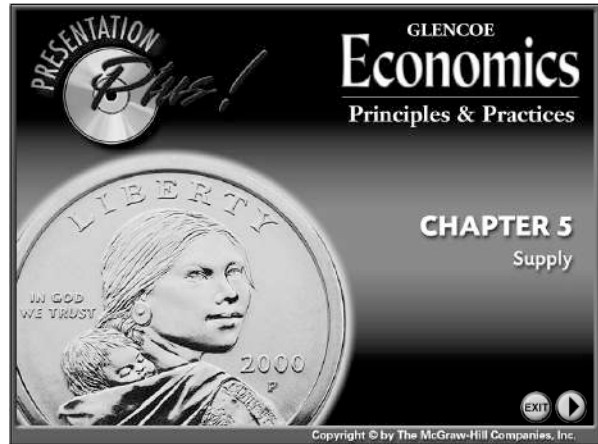


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## **CHAPTER INTRODUCTION**

**SECTION 1** [What Is Supply?](#)

**SECTION 2** [The Theory of Production](#)

**SECTION 3** [Cost, Revenue, and Profit Maximization](#)

## **CHAPTER SUMMARY**

## **CHAPTER ASSESSMENT**

Click a hyperlink to go to the corresponding section.  
Press the ESC key at any time to exit the presentation.



3

## **Economics and You**


About how many hours do you spend studying every night? How many hours would you study if you were paid \$1 an hour? \$10 an hour? If you will study more for a higher price, you are following the Law of Supply.



Click the Speaker button to listen to Economics and You.



4




**Chapter Objectives**  
**Section 1: What Is Supply?**

- Understand the difference between the supply schedule and the supply curve. ↕
- Explain how market supply curves are derived. ↕
- Specify the reasons for a change in supply.

Click the mouse button or press the Space Bar to display the information.

5




**Chapter Objectives**  
**Section 2: The Theory of Production**

- Explain the theory of production. ↕
- Describe the three stages of production.

Click the mouse button or press the Space Bar to display the information.

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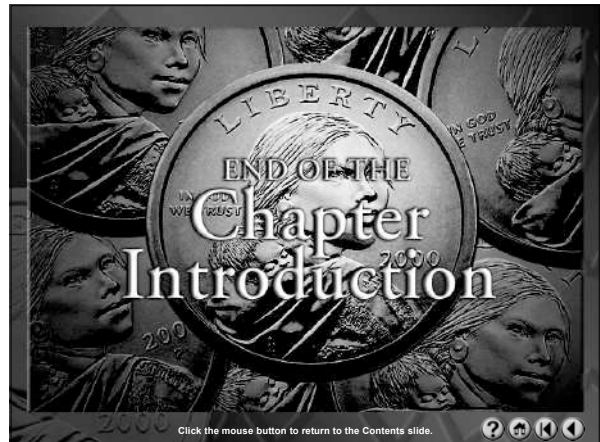


**Chapter Objectives**  
**Section 3: Cost, Revenue, and Profit Maximization**

- Define four key measures of cost. ↕
- Identify two key measures of revenue. ↕
- Apply incremental analysis to business decisions.

Click the mouse button or press the Space Bar to display the information.

7





## Study Guide

### Main Idea

For almost any good or service, the higher the price, the larger the quantity that will be offered for sale. ↕

### Reading Strategy

**Graphic Organizer** As you read the section, complete a graphic organizer similar to the one on page 113 of your textbook by describing how supply differs from demand.

Click the mouse button or press the Space Bar to display the information. Section 1 begins on page 113 of your textbook.



9



## Study Guide (cont.)

### Key Terms

- supply ↕
- Law of Supply ↕
- supply schedule ↕
- supply curve ↕
- market supply curve ↕
- quantity supplied ↕
- change in quantity supplied ↕
- change in supply ↕
- subsidy ↕
- supply elasticity ↕

### Objectives

- After studying this section, you will be able to: ↕
- **Understand** the difference between the supply schedule and the supply curve.

Click the mouse button or press the Space Bar to display the information. Section 1 begins on page 113 of your textbook.



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## Study Guide (cont.)

### Objectives

- **Explain** how market supply curves are derived. ↕
- **Specify** the reasons for a change in supply. ↕

### Applying Economic Concepts

**Supply** The Law of Supply tells us that firms will produce and offer for sale more of their product at a high price than at a low price. On another level, think about your own labor. You are the supplier, and the higher the pay, the more work you are willing to supply.

Click the Speaker button to listen to the Cover Story.

Click the mouse button or press the Space Bar to display the information. Section 1 begins on page 113 of your textbook.



11



## Introduction

- The concept of supply is based on voluntary decisions made by producers, whether they are proprietorships working out of home offices or large corporations operating out of downtown corporate headquarters. ↕
- For example, a producer might decide to offer one amount for sale at one price and a different quantity at another price.

Click the mouse button or press the Space Bar to display the information.



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### Introduction (cont.)

- **Supply**, then, is defined as the amount of a product that would be offered for sale at all possible prices that could prevail in the market. ↴
- Because the producer is receiving payment for his or her products, it should come as no surprise that more will be offered at higher prices. ↴
- This forms the basis for the **Law of Supply**, the principle that suppliers will normally offer more for sale at high prices and less at lower prices.

Click the mouse button or press the Space Bar to display the information.



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### An Introduction to Supply

- All suppliers of economic products must decide how much to offer for sale at various prices—a decision made according to what is best for the individual seller. ↴
- What is best depends, in turn, upon the cost of producing the goods or services. ↴
- The concept of supply, like demand, can be illustrated in the form of a table or a graph.

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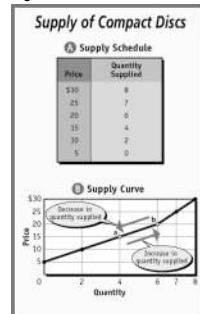
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### The Supply Schedule

- The **supply schedule** is a listing of the various quantities of a particular product supplied at all possible prices in the market.

Figure 5.1



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### The Supply Schedule (cont.)

- The only real difference between a supply schedule and a demand schedule is that prices and quantities now move in the same direction for supply—rather than in opposite directions as in the case of demand.



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### The Individual Supply Curve

- The data presented in the supply schedule can also be illustrated graphically as an upward-sloping line. ↴
- To draw it, we transfer each of the price-quantity observations in the schedule over to the graph, and then connect the points to form the curve. ↴
- The result is a **supply curve**, a graph showing the various quantities supplied at each and every price that might prevail in the market.

Click the mouse button or press the Space Bar to display the information.



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### The Individual Supply Curve (cont.)

- All normal supply curves slope from the lower left-hand corner of the graph to the upper right-hand corner. ↴
- This is a positive slope and shows that if one of the values goes up, the other will go up too.

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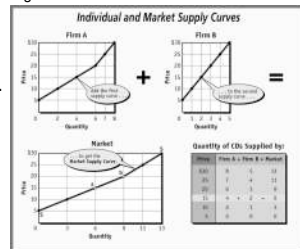
18



### The Market Supply Curve

- The **market supply curve** shows the quantities offered at various prices by all firms that offer the product for sale in a given market.

Figure 5.2



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### Change in Quantity Supplied

- The **quantity supplied** is the amount that producers bring to market at any given price. ↴
- A **change in quantity supplied** is the change in amount offered for sale in response to a change in price. ↴
- Note that the change in quantity supplied can be an *increase* or a *decrease*, depending on whether more or less of a product is offered.

Click the mouse button or press the Space Bar to display the information.



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### Change in Quantity Supplied (cont.)

- While the interaction of supply and demand usually determines the final price for the product, the producer has the freedom to adjust production.

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### Change in Supply

- Sometimes something happens to cause a **change in supply**, a situation where suppliers offer different amounts of products for sale at all possible prices in the market.

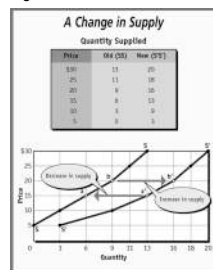
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### Change in Supply (cont.)

- When both old and new quantities supplied are plotted in the form of a graph, it appears as if the supply curve has shifted to the right, showing an *increase in supply*.

Figure 5.3



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### Change in Supply (cont.)

- For a *decrease in supply* to occur, less would be offered for sale at each and every price, and the supply curve would shift to the left. ↴
- Changes in supply, whether increases or decreases, can occur for several reasons.

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Click the mouse button or press the Space Bar to display the information.





## Cost of Inputs

- A change in the cost of inputs can cause a change in supply. ↴
- Supply might increase because of a decrease in the cost of inputs, such as labor or packaging. ↴
- If the price of the inputs drops, producers are willing to produce more of a product at each and every price, thereby shifting the supply curve to the right.

Click the mouse button or press the Space Bar to display the information.



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## Cost of Inputs (cont.)

- If labor or other costs rise, producers would not be willing to produce as many units at each and every price. ↴
- Instead, they would offer fewer products for sale, and the supply curve would shift to the left.

Click the mouse button or press the Space Bar to display the information.



26



## Productivity

- When management motivates its workers, or if workers decide to work more efficiently, productivity should increase. ↴
- The result is that more is produced at every price, which shifts the supply curve to the right. ↴
- On the other hand, if workers are unmotivated, untrained, or unhappy, productivity could decrease. ↴
- The supply curve shifts to the left because fewer goods are brought to the market at every possible price.

Click the mouse button or press the Space Bar to display the information.



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## Technology

- New technology tends to shift the supply curve to the right. ↴
- The introduction of a new machine, chemical, or industrial process can affect supply by lowering the cost of production or by increasing productivity. ↴
- When production costs go down, the producer is usually able to produce more goods and services at each and every price in the market.

Click the mouse button or press the Space Bar to display the information.



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## Taxes and Subsidies

- Firms view taxes as costs. ↴
- If the producer's inventory is taxed or if fees are paid to receive a license to produce, the cost of production goes up. ↴
- This causes the supply curve to shift to the left. ↴
- Or, if taxes go down production costs go down, supply then increases and the supply curve shifts to the right.

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Click the mouse button or press the Space Bar to display the information.



## Taxes and Subsidies (cont.)

- A **subsidy** is a government payment to an individual, business, or other group to encourage or protect a certain type of economic activity. ↴
- Subsidies lower the cost of production, encouraging current producers to remain in the market and new producers to enter. ↴
- When subsidies are repealed, costs go up, producers leave the market, and the supply curve shifts to the left.

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Click the mouse button or press the Space Bar to display the information.



## Expectations

- Expectations about the future price of a product can also affect the supply curve. ↴
- If producers think the price of their product will go up, they may withhold some of the supply, causing supply to decrease and the supply curve to shift to the left. ↴
- On the other hand, producers may expect lower prices for their output in the future. ↴
- In this situation, they may try to produce and sell as much as possible right away, causing the supply curve to shift to the right.

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Click the mouse button or press the Space Bar to display the information.



## Government Regulations

- When the government establishes new regulations, the cost of production can be affected, causing a change in supply. ↴
- In general, increased–or tighter–government regulations restrict supply, causing the supply curve to shift to the left. ↴
- Relaxed regulations allow producers to lower the cost of production, which results in a shift of the supply curve to the right.

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Click the mouse button or press the Space Bar to display the information.







### Number of Sellers

- A change in the number of suppliers causes the market supply curve to shift to the right or left. ↕
- As more firms enter an industry, the supply curve shifts to the right. In other words, the larger the number of suppliers, the greater the market supply. ↕
- If some suppliers leave the market, fewer products are offered for sale at all possible prices. This causes supply to decrease, shifting the curve to the left.

Click the mouse button or press the Space Bar to display the information.



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### Number of Sellers (cont.)

- In the real world, sellers are entering the market and leaving the market all the time. ↕
- Some economic analysts believe that, at least initially, the development of the Internet will result in larger numbers entering the market than in leaving. ↕
- They point out that almost anyone with Internet experience and a few thousand dollars can open up his or her own Internet store.

Click the mouse button or press the Space Bar to display the information.



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### Elasticity of Supply

- **Supply elasticity** is a measure of the way in which quantity supplied responds to a change in price. ↕
- If a small increase in price leads to a relatively larger increase in output, supply is elastic. ↕
- If the quantity supplied changes very little, supply is inelastic.

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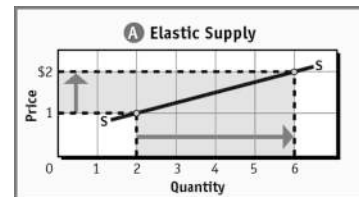
35



### Three Elasticities

- The supply curve in Figure 5.4a is elastic because the change in price causes a relatively larger change in quantity supplied.

Figure 5.4a



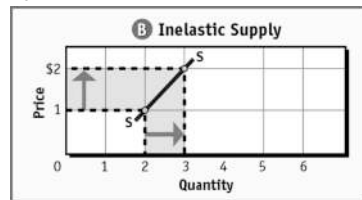
36



### Three Elasticities (cont.)

- The supply curve in Figure 5.4b is inelastic because the change in price causes a relatively smaller change in quantity supplied.

Figure 5.4b



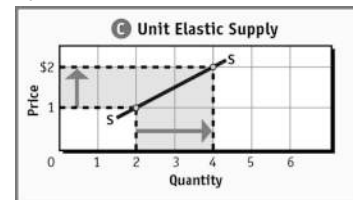
37



### Three Elasticities (cont.)

- The supply curve in Figure 5.4c is a unit elastic supply curve because the change in price causes a proportional change in the quantity supplied.

Figure 5.4c



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### Three Elasticities (cont.)

Figure 5.4d

**D Change in Supply Due to Change in Price**

Type of Elasticity	Change in Quantity Supplied Due to a Change in Price
Elastic	More than proportional
Unit Elastic	Proportional
Inelastic	Less than proportional

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### Determinants of Supply Elasticity

- The elasticity of a business's supply curve depends on the nature of its production. ↕
- If a firm can adjust to new prices quickly, then supply is likely to be elastic. ↕
- If the nature of production is such that adjustments take longer, then supply is likely to be inelastic.

Click the mouse button or press the Space Bar to display the information.

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### Determinants of Supply Elasticity (cont.)

- The elasticity of supply is different from the elasticity of demand in several important respects. ↓
  - First, the number of substitutes has no bearing on the elasticity of supply. ↓
  - In addition, considerations such as the ability to delay the purchase or the portion of income consumed have no relevance to supply elasticity even though they are essential for demand elasticity.

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Click the mouse button or press the Space Bar to display the information.



### Section Assessment

**Q Main Idea** Using your notes from the graphic organizer activity on page 113 of your textbook, describe how supply is different from demand.

**A** Demand is the desire, ability, and willingness to buy, and deals with how prices affect consumer spending. Supply is the amount of a product for sale and deals with how prices affect quantity supplied.

42

Click the mouse button or press the Space Bar to display the answer.



### Section Assessment (cont.)

**Q Describe** the difference between the supply schedule and the supply curve.

**A** Schedule: information on supply in table form  
Curve: same information in graphic form

43

Click the mouse button or press the Space Bar to display the answer.



### Section Assessment (cont.)

**Q Describe** how market supply curves are obtained.


**A** Determine amount produced by individual firms. Add numbers and plot on a graph.

44

Click the mouse button or press the Space Bar to display the answer.




**Section Assessment** (cont.)



**Q** List the factors that can cause a change in supply.


**A** Factors include cost of inputs, productivity, technology, number of sellers, taxes and subsidies, expectations, and government regulations.

Click the mouse button or press the Space Bar to display the answer.



45


**Section Assessment** (cont.)



**Q** **Supply** Provide an example of an economic good whose producer would increase the quantity supplied if the price were to go up.


**A** Answers will vary.

Click the mouse button or press the Space Bar to display the answer.



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**Section Assessment** (cont.)



**Q** **Understanding Cause and Effect** According to the Law of Supply, how does price affect the quantity offered for sale?


**A** Sellers will offer more at higher prices and less at lower prices.

Click the mouse button or press the Space Bar to display the answer.




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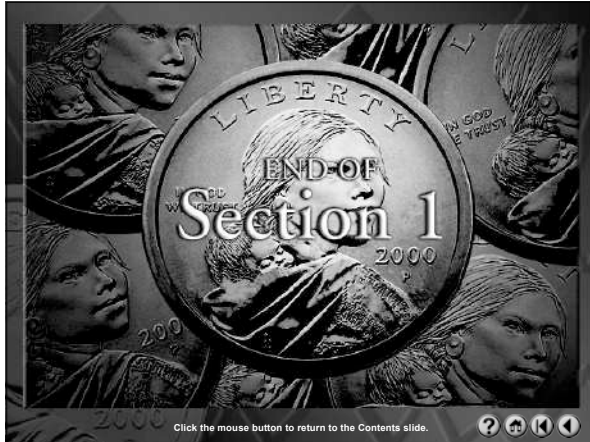
**Section Close**



**Write a poem, a proverb, or a riddle that illustrates the relationship between price and supply.**



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## Study Guide

### Main Idea

A change in inputs—labor, machinery, tools—results in a change in production. ↴

### Reading Strategy

**Graphic Organizer** As you read about production, complete a graphic organizer similar to the one on page 122 of your textbook by listing what occurs during the three stages of production.



## Study Guide (cont.)

### Key Terms

- theory of production ↴
- short run ↴
- long run ↴
- Law of Variable Proportions ↴
- production function ↴
- raw materials ↴
- total product ↴
- marginal product ↴
- stages of production ↴
- diminishing returns



## Study Guide (cont.)

### Objectives

- After studying this section, you will be able to: ↴
- **Explain** the theory of production. ↴
  - **Describe** the three stages of production. ↴

### Applying Economic Concepts

**Diminishing Returns** Has the quality of your work ever declined because you worked too hard at something? Sometimes you reach a stage where you still make progress but at a diminished rate.





## Introduction

- Producing an economic good or service requires a combination of land, labor, capital, and entrepreneurs. ↴
- The **theory of production** deals with the relationship between the factors of production and the output of goods and services. ↴
- The theory of production generally is based on the **short run**, a period of production that allows producers to change only the amount of the variable input called labor.

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Click the mouse button or press the Space Bar to display the information.



## Introduction (cont.)

- This contrasts with the **long run**, a period of production long enough for producers to adjust the quantities of all their resources, including capital. ↴
- For example, Ford Motors hiring 300 extra workers for one of its plants is a short-run adjustment. ↴
- If Ford builds a new factory, this is a long-run adjustment.

54

Click the mouse button or press the Space Bar to display the information.



## Law of Variable Proportions

- The **Law of Variable Proportions** states that, in the short run, output will change as one input is varied while the others are held constant. ↴
- The law helps answer the question: How is the output of the final product affected as more units of one variable input or resource are added to a fixed amount of other resources?

55

Click the mouse button or press the Space Bar to display the information.



## The Production Function

- The Law of Variable Proportions can be illustrated by using a **production function**—a concept that describes the relationship between changes in output to different amounts of a single input while other inputs are held constant.

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### The Production Function (cont.)

- The production function can be illustrated with a schedule, such as the one in Figure 5.5a. ↴
- The production schedule in the figure lists hypothetical output as the number of workers is varied from zero to 12. ↴

Figure 5.5a

**The Law of Variable Proportions**  
① The Production Schedule

Number of Workers	Total Product	Marginal Product	Stage of Production
0	0	0	Stage I
1	7	7	
2	20	13	
3	34	14	
4	42	8	
5	50	8	Stage II
6	110	20	
7	129	19	
8	138	9	
9	144	6	
10	148	4	Stage III
11	145	-3	
12	135	-10	

\*All figures in terms of output per day.

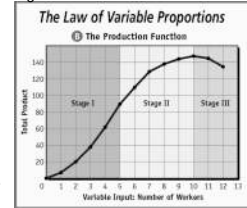
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### The Production Function (cont.)

- The information may also be shown with a graph. ↴
- In this example, only the number of workers changes. No changes occur in the amount of machinery used or the quantities of **raw materials**—unprocessed natural products used in production. ↴

Figure 5.5b



### Total Product

- The second column in the production schedule shows **total product**, or total output produced by the firm. ↴
- The numbers indicate that the plant barely operates when it has only one or two workers. ↴
- As a result, some resources stand idle much of the time. ↴

Click the mouse button or press the Space Bar to display the information.



### Total Product Rises

- As more workers are added, total product rises. ↴
- More workers can operate more machinery, and plant output rises. ↴
- Additional workers also means that the workers can specialize. ↴
- For example, one group runs the machines, another handles maintenance, and a third group assembles the products. ↴
- By working in this way—as a coordinated whole—the firm can be more productive. ↴

Click the mouse button or press the Space Bar to display the information.





### Total Product Slows

- As even more workers are added output continues to rise, but it does so at a slower rate until it can grow no further. ↴
- Finally, the addition of the eleventh and twelfth workers causes total output to go down because these workers just get in the way of the others. ↴
- Although the ideal number of workers cannot be determined until costs are considered, it is clear that the eleventh and twelfth workers will not be hired.

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Click the mouse button or press the Space Bar to display the information.



### Marginal Product

- **Marginal product** is the extra output or change in total product caused by the addition of one more unit of variable input.

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### Three Stages of Production

- When it comes to determining the optimal number of variable units to be used in production, changes in marginal product are of special interest. ↴
- The three **stages of production**—increasing returns, diminishing returns, and negative returns—are based on the way marginal product changes as the variable input of labor is changed. ↴
- In Stage I, the first workers hired cannot work efficiently because there are too many resources per worker.

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Click the mouse button or press the Space Bar to display the information.



### Three Stages of Production (cont.)

- As the number of workers increases, they make better use of their machinery and resources. ↴
- As long as each new worker hired contributes more to total output than the worker before, total output rises at an increasingly faster rate. ↴
- Because marginal output increases by a larger amount every time a new worker is added, Stage I is known as the stage of increasing returns.

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Click the mouse button or press the Space Bar to display the information.







### Three Stages of Production (cont.)

- As soon as a firm discovers that each new worker adds more output than the last, the firm is tempted to hire another worker. ↓
- In Stage II, the total production keeps growing, but by smaller and smaller amounts. ↓
- Any additional workers hired may stock shelves, package parts, and do other jobs that leave the machine operators free to do their jobs. ↓
- The rate of increase in total production, however, is now starting to slow down.

Click the mouse button or press the Space Bar to display the information.



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### Three Stages of Production (cont.)

- Stage II illustrates the principle of **diminishing returns**, the stage where output increases at a diminishing rate as more units of a variable input are added. ↓
- In the third stage, the firm has hired too many workers, and they are starting to get in each other's way. ↓
- Marginal product becomes negative and total plant output decreases. ↓
- Most companies do not hire workers whose addition would cause total production to decrease.

Click the mouse button or press the Space Bar to display the information.



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### Section Assessment

**Q Main Idea** Using your notes from the graphic organizer activity on page 122, explain how production is affected by a change in inputs.

**A** As input changes, production of outputs also changes. First, each input will cause an increase. Then, each input will cause an increase, but in increasingly smaller increments. Finally, each input will cause a decrease.

Click the mouse button or press the Space Bar to display the answer.



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### Section Assessment (cont.)

**Q Describe** the relationship on which the theory of production is based.

**A** The theory of production states that changing factors of production (inputs) will change the output of goods and services.

Click the mouse button or press the Space Bar to display the answer.



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### Section Assessment (cont.)

**Q** Explain how marginal product changes in each of the three stages of production.

**A** In Stage I, marginal product increases. In Stage II, marginal product continues to increase, but at a slower rate. In Stage III, marginal product becomes negative.

Click the mouse button or press the Space Bar to display the answer.



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### Section Assessment (cont.)

**Q** Identify what point will eventually be reached if companies continue adding workers.

**A** Workers will be in each other's way and output will decrease.

Click the mouse button or press the Space Bar to display the answer.



70



### Section Assessment (cont.)

**Q** **Diminishing Returns** Provide an example of a time when you entered a period of diminishing returns or even negative returns. Explain why this might have occurred.

**A** Answers will vary.

Click the mouse button or press the Space Bar to display the answer.



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### Section Assessment (cont.)

**Q** **Sequencing Information** You need to hire workers for a project you are directing. You may add one worker at a time in a manner that will allow you to measure the added contribution of each worker. At what point will you stop hiring workers? Relate this process to the three stages of the production function.

**A** Stop hiring workers just before Stage II begins. In Stage I, as each worker is added, total product and marginal product increase. In Stage II, as each worker is added, marginal product is positive but decreasing. Therefore, the marginal product is greatest just before Stage II.

Click the mouse button or press the Space Bar to display the answer.



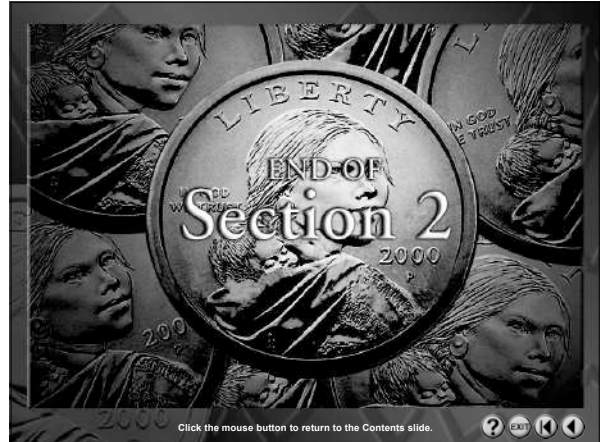
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## Section Close



Discuss the following statement:  
The most important economic concept for business managers to understand is that of marginal product.

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Click the mouse button to return to the Contents slide.



## Study Guide



### Main Idea

Profit is maximized when the marginal costs of production equal the marginal revenue from sales. ↴

### Reading Strategy

**Graphic Organizer** As you read the section, complete a graphic organizer similar to the one on page 127 of your textbook by explaining how total revenue differs from marginal revenue. Then provide an example of each.

75

Click the mouse button or press the Space Bar to display the information. Section 3 begins on page 127 of your textbook.



## Study Guide (cont.)



### Key Terms

- fixed cost ↴
- overhead ↴
- variable cost ↴
- total cost ↴
- marginal cost ↴
- e-commerce ↴
- total revenue ↴
- marginal revenue ↴
- marginal analysis ↴
- break-even point ↴
- profit-maximizing quantity of output

76

Click the mouse button or press the Space Bar to display the information. Section 3 begins on page 127 of your textbook.





## Study Guide (cont.)

### Objectives

After studying this section, you will be able to: ↴

- **Define** four key measures of cost. ↴
- **Identify** two key measures of revenue. ↴
- **Apply** incremental analysis to business decisions. ↴

### Applying Economic Concepts

**Overhead** Overhead is one type of fixed cost that we try to avoid whenever we can. How can overhead change the way people do business?

Click the Speaker button to listen to the Cover Story.

Click the mouse button or press the Space Bar to display the information. Section 3 begins on page 127 of your textbook.



77



## Introduction

- Overhead is one of many different measures of costs.



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## Measures of Cost

- Because the cost of inputs influences efficient production decisions, a business must analyze costs before making its decisions. ↴
- To simplify decision making, cost is divided into several different categories. ↴
- The first category is **fixed cost**—the cost that a business incurs even if the plant is idle and output is zero.

Click the mouse button or press the Space Bar to display the information.



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## Measures of Cost (cont.)

- It makes no difference whether the business produces nothing, very little, or a large amount. Total fixed cost, or **overhead**, remains the same. ↴
- Fixed costs include salaries paid to executives, interest charges on bonds, rent payments on leased properties, and local and state property taxes. ↴
- Fixed costs also include depreciation, the gradual wear and tear on capital goods over time and through use.

Click the mouse button or press the Space Bar to display the information.



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### Measures of Cost (cont.)

- The nature of fixed costs is illustrated in the fourth column of the table below.

Figure 5.6

Regions of Production	Production Schedule			Costs			Revenues		Profit	
	Number of Workers	Total Product	Marginal Product	Total Fixed Costs	Total Variable Costs	Total Marginal Costs	Total Revenue	Marginal Revenue	Total Profit	
Stage I	0	0	0	\$50	\$0	\$50	—	—	—	
	1	7	7	50	50	140	\$13	105	\$15	—135
	2	20	13	50	180	230	6.92	300	15	70
	3	38	18	50	270	320	5.00	370	15	120
	4	62	24	50	380	430	5.75	430	15	105
Stage II	5	92	28	50	450	500	3.21	1,340	15	890
	6	110	20	50	540	580	4.90	1,650	15	1,060
	7	129	19	50	630	680	4.74	1,935	15	1,230
	8	138	9	50	720	770	10.00	2,070	15	1,300
Stage III	9	144	6	50	810	860	15.00	2,160	15	1,300
	10	148	4	50	900	950	22.50	2,250	15	1,270
	11	145	-1	50	990	1,040	—	2,375	15	1,130
	12	135	-10	50	1,080	1,130	—	2,025	15	895



### Measures of Cost (cont.)

- Another kind of cost is **variable cost**, a cost that changes when the business rate of operation or output changes. ↴
- While fixed costs generally are associated with machines and other capital goods, variable costs generally are associated with labor and raw materials. ↴
- The **total cost** of production is the sum of the fixed and variable costs. ↴
- Total cost takes into account all the costs a business faces in the course of its operations.

Click the mouse button or press the Space Bar to display the information.



### Measures of Cost (cont.)

- Another category of cost is **marginal cost**—the extra cost incurred when a business produces one additional unit of a product. ↴
- Because fixed costs do not change from one level of production to another, marginal cost is the per-unit increase in variable costs that stems from using additional factors of production.

Click the mouse button or press the Space Bar to display the information.



### Applying Cost Principles

- The cost and combination, or mix, of inputs affects the way businesses produce. ↴
- The examples on the following slides illustrate the importance of costs to business firms.

Click the mouse button or press the Space Bar to display the information.





### Self-Service Gas Station

- Consider the case of a self-serve gas station with many pumps and a single attendant who works in an enclosed booth. ↴
- This operation is likely to have large fixed costs, such as the cost of the lot, the pumps and tanks, and the taxes and licensing fees paid to state and local governments. ↴
- The variable costs, on the other hand, are relatively small.

Click the mouse button or press the Space Bar to display the information.



85



### Self-Service Gas Station (cont.)

- When all costs are included, however, the ratio of variable to fixed costs is low. ↴
- As a result, the owner may operate the station 24 hours a day, seven days a week for a relatively low cost.

Click the mouse button or press the Space Bar to display the information.



86



### Internet Stores

- Many stores are using the Internet because the overhead, or the fixed cost of operation, is so low. ↴
- An individual engaged in **e-commerce**—electronic business or exchange conducted over the Internet—does not need to spend large sums of money to rent a building and stock it with inventory.

Click the mouse button or press the Space Bar to display the information.



87



### Measures of Revenue

- Businesses use two key measures of revenue to find the amount of output that will produce the greatest profits. ↴
- The **total revenue** is the number of units sold multiplied by the average price per unit. ↴
- The second, and more important, measure of revenue is **marginal revenue**, the extra revenue associated with the production and sale of one additional unit of output.

Click the mouse button or press the Space Bar to display the information.



88



### Measures of Revenue (cont.)

- The marginal revenues are determined by dividing the change in total revenue by the marginal product. ↴
- Marginal revenue is not always constant. Businesses often find that marginal revenues start high and then decrease as more and more units are produced and sold.

Click the mouse button or press the Space Bar to display the information.



89



### Marginal Analysis

- Economists use **marginal analysis**, a type of cost-benefit decision making that compares the extra benefits to the extra costs of an action. ↴
- Marginal analysis is helpful in a number of situations, including break-even analysis and profit maximization. ↴
- The **break-even point** is the total output or total product the business needs to sell in order to cover its total costs.

Click the mouse button or press the Space Bar to display the information.



90



### Marginal Analysis (cont.)

- A business wants to do more than break even, however. It wants to make as much profit as it can. ↴
- The owners of the business can decide how many workers and what level of output are needed to generate the maximum profits by comparing marginal costs and marginal revenues. ↴
- In general, as long as the marginal cost is less than the marginal revenue, the business will keep hiring workers.

Click the mouse button or press the Space Bar to display the information.



91



### Marginal Analysis (cont.)

- When marginal cost is less than marginal revenue, more variable inputs should be hired to expand output. ↴
- The **profit-maximizing quantity of output** is reached when marginal cost and marginal revenue are equal.

Click the mouse button or press the Space Bar to display the information.



92

### Section Assessment



**Q Main Idea** Using your notes from the graphic organizer activity on page 127, describe how cost affects total revenue.

**A** The cost of inputs influences supply. The supply influences the number sold. The number sold multiplied by the average price per unit is the total revenue.

Click the mouse button or press the Space Bar to display the answer.



93

### Section Assessment (cont.)



**Q** List the four measures of cost.

**A** The four measures of cost are fixed cost, variable cost, total cost, and marginal cost.

Click the mouse button or press the Space Bar to display the answer.



94

### Section Assessment (cont.)



**Q** Describe the two measures of revenue.

**A** The total revenue is the number of units sold multiplied by the average price per unit. The marginal revenue is the extra revenue associated with the production and sale of one additional unit of output.

Click the mouse button or press the Space Bar to display the answer.



95

### Section Assessment (cont.)



**Q** Explain the use of marginal analysis for break-even and profit-maximizing decisions.

**A** By comparing the marginal revenue and the marginal cost of adding units of variable input, break-even and profit-maximizing points can be established.


Click the mouse button or press the Space Bar to display the answer.



96




**Section Assessment (cont.)**



**Q Overhead** How might overhead affect the price of a new car?


**A** A car manufacturer or dealer with high overhead may need to charge more.

Click the mouse button or press the Space Bar to display the answer.



97


**Section Assessment (cont.)**



**Q Understanding Cause and Effect** Many oil-processing plants operate 24 hours a day, using several shifts of workers to maintain operations. How do you think a plant's fixed and variable costs affect its decision to operate around the clock?


**A** When variable costs are small relative to fixed costs, the additional cost of operating around the clock is low.

Click the mouse button or press the Space Bar to display the answer.




98

**Section Close**

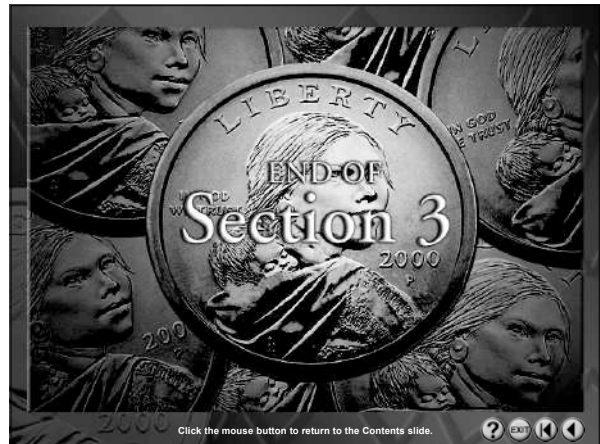


Consider which, if any, of society's economic goals are furthered by profit maximization.

Click the mouse button or press the Space Bar to return to the Contents slide.



99





## Section 1: What Is Supply?

- **Supply** is the quantities of output that producers will bring to market at each and every price. Supply can be represented in a **supply schedule**, or graphically as a **supply curve**. ↕
- The **Law of Supply** states that the quantities of an economic product offered for sale vary directly with its price. If prices are high, suppliers will offer greater quantities for sale. If prices are low, they will offer smaller quantities for sale. ↕
- The **market supply curve** is the sum of the individual supply curves. ↕
- A **change in quantity supplied** is represented by a movement along the supply curve.

Click the mouse button or press the Space Bar to display the information.



101



## Section 1: What Is Supply? (cont.)

- A **change in supply** is a change in the quantity that will be supplied at each and every price. An increase in supply is presented graphically as a shift of the supply curve to the right, and a decrease in supply appears as a shift of the supply curve to the left. ↕
- Changes in supply can be caused by a change in the cost of inputs, productivity, new technology, taxes, **subsidies**, expectations, government regulations, and number of sellers. ↕
- **Supply elasticity** describes how a change in quantity supplied responds to a change in price.

Click the mouse button or press the Space Bar to display the information.



102



## Section 1: What Is Supply? (cont.)

- If supply is elastic, a given change in price will cause a more than proportional change in quantity supplied. If supply is inelastic, a given change in price will cause a less than proportional change in quantity supplied. If supply is unit elastic, a given change in price will cause a proportional change in quantity supplied.



103



## Section 2: The Theory of Production

- The **theory of production** deals with the relationship between the factors of production and the output of goods and services. ↕
- The theory of production deals with the **short run**, a production period so short that only the variable input (usually labor) can be changed. This contrasts to the **long run**, a production period long enough for all inputs—including capital—to vary. ↕
- The **Law of Variable Proportions** states that the quantity of output will vary as increasing units of a single input are added. This law is presented graphically in the form of a **production function**.

Click the mouse button or press the Space Bar to display the information.



104



## Section 2: The Theory of Production (cont.)

- The two most important measures of output are **total product** and **marginal product**, the extra output gained from adding one additional unit of input. ↓
- Three **stages of production**—increasing returns, **diminishing returns**, and negative returns—show how marginal product changes when additional variable inputs are added. Production takes place in Stage II under conditions of diminishing returns.

105

Click the mouse button or press the Space Bar to display the information.



## Section 3: Cost, Revenue, and Profit Maximization

- Four important measures of cost exist: **total cost**, which is the sum of **fixed cost** and **variable cost**, and **marginal cost**, which is the increase in total cost that stems from producing one additional unit of output. ↓
- The mix of variable and fixed costs that a business faces affects the way the business operates. ↓
- The key measure of revenue is **marginal revenue**, which is the change in total revenue when one more unit of output is sold.

106

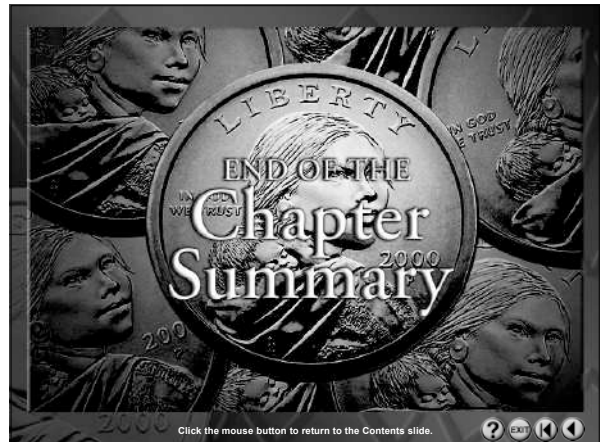
Click the mouse button or press the Space Bar to display the information.



## Section 3: Cost, Revenue, and Profit Maximization (cont.)

- The **profit-maximizing quantity of output** occurs when marginal cost is exactly equal to **marginal revenue**. Other quantities of output may yield the same profit, but none yield more.

107





### Identifying Key Terms

Match the letter of the term best described by each statement.

- C a production cost that does not change as total business output changes
- D decision making that compares the additional costs with the additional benefits of an action
- B associated with Stage II of production

- |                        |                        |
|------------------------|------------------------|
| A. depreciation        | G. production function |
| B. diminishing returns | H. profit-maximizing   |
| C. fixed cost          | I. total cost          |
| D. marginal analysis   | J. variable cost       |
| E. marginal product    | K. overhead            |
| F. marginal revenue    | L. total product       |

Click the mouse button or press the Space Bar to display the answer. The Chapter Assessment is on pages 134–135.



109



### Identifying Key Terms (cont.)

Match the letter of the term best described by each statement.

- J a production cost that changes when output changes
- G a graphical representation of the theory of production
- E the additional output produced when one additional unit of input is added

- |                        |                        |
|------------------------|------------------------|
| A. depreciation        | G. production function |
| B. diminishing returns | H. profit-maximizing   |
| C. fixed cost          | I. total cost          |
| D. marginal analysis   | J. variable cost       |
| E. marginal product    | K. overhead            |
| F. marginal revenue    | L. total product       |

Click the mouse button or press the Space Bar to display the answer.



110



### Identifying Key Terms (cont.)

Match the letter of the term best described by each statement.

- F change in total revenue from the sale of one additional unit of output
- A the gradual wearing out of capital goods
- I the sum of variable and fixed costs
- H when marginal revenue equals marginal cost

- |                        |                        |
|------------------------|------------------------|
| A. depreciation        | G. production function |
| B. diminishing returns | H. profit-maximizing   |
| C. fixed cost          | I. total cost          |
| D. marginal analysis   | J. variable cost       |
| E. marginal product    | K. overhead            |
| F. marginal revenue    | L. total product       |

Click the mouse button or press the Space Bar to display the answer.



111



### Identifying Key Terms (cont.)

Match the letter of the term best described by each statement.

- L total output produced by a firm
- K total fixed costs

- |                        |                        |
|------------------------|------------------------|
| A. depreciation        | G. production function |
| B. diminishing returns | H. profit-maximizing   |
| C. fixed cost          | I. total cost          |
| D. marginal analysis   | J. variable cost       |
| E. marginal product    | K. overhead            |
| F. marginal revenue    | L. total product       |

Click the mouse button or press the Space Bar to display the answer.



112



### Reviewing the Facts

**Q** Describe what is meant by supply.

**A** quantities of a product offered for sale at all possible prices that could prevail in the market

Click the mouse button or press the Space Bar to display the answer.



113



### Reviewing the Facts (cont.)

**Q** Distinguish between the individual supply curve and the market supply curve.

**A** Individual supply curves show quantities of a product supplied at each and every market price; market supply curves show quantities of a product at various prices by all firms that market the product.

Click the mouse button or press the Space Bar to display the answer.



114



### Reviewing the Facts (cont.)

**Q** Explain what is meant by a change in quantity supplied.

**A** the change in the amount of a product offered for sale in response to a price change

Click the mouse button or press the Space Bar to display the answer.



115



### Reviewing the Facts (cont.)

**Q** Identify the factors that cause a change in supply.

**A** cost of inputs, productivity, technology, number of sellers, taxes and subsidies, expectations, government regulations

Click the mouse button or press the Space Bar to display the answer.



116



### Reviewing the Facts (cont.)

**Q** Describe the Law of Variable Proportions.

**A** In the short run, output will change as one input is varied while others remain constant.

Click the mouse button or press the Space Bar to display the answer.



117



### Reviewing the Facts (cont.)

**Q** Explain the difference between total product and marginal product.

**A** Total product is total output produced by a firm; marginal product is extra output generated by adding one more unit of variable input.

Click the mouse button or press the Space Bar to display the answer.



118



### Reviewing the Facts (cont.)

**Q** Identify the three stages of production.

**A** increasing returns, diminishing returns, and negative returns

Click the mouse button or press the Space Bar to display the answer.



119



### Reviewing the Facts (cont.)

**Q** Describe the relationship between marginal cost and total cost.


**A** Marginal cost is the change in total cost incurred by producing one additional unit of a product. Total cost is the sum of fixed and variable costs.

Click the mouse button or press the Space Bar to display the answer.



120

**Reviewing the Facts** (cont.)




**Q** Identify four measures of cost.

**A** total cost, fixed cost, variable cost, marginal cost

Click the mouse button or press the Space Bar to display the answer.

121

**Reviewing the Facts** (cont.)




**Q** Describe one practical application of cost principles.

**A** Answers should reflect an understanding of the importance of cost to business firms.

Click the mouse button or press the Space Bar to display the answer.

122

**Thinking Critically**




**Q** Making Comparisons Create a chart like the one on page 134 of your textbook to help you explain how supply differs from demand.

**A** Charts should reflect an understanding of supply and demand.

Click the mouse button or press the Space Bar to display the answer.

123

**Thinking Critically** (cont.)




**Q** Making Generalizations Why might production functions tend to differ from one firm to another?

**A** Because different firms have different technologies and use different amounts of variable inputs, the production function for each firm will vary.

Click the mouse button or press the Space Bar to display the answer.

124


**Thinking Critically** (cont.)



**Q** **Understanding Cause and Effect** Explain why e-commerce reduces fixed costs.


**A** Fixed costs, like employee salaries, interest charges on bonds, rent payments, and property taxes do not apply to e-commerce. Web access and software are the only fixed costs for e-commerce businesses.

Click the mouse button or press the Space Bar to display the answer.



125


**Applying Economic Skills**



**Q** **Supply According to the Law of Supply,** what will happen to the number of products a firm offers for sale when prices go down? What will happen to the cost of additional units of production when a firm starts having diminishing returns? What will happen to the number of products a firm will offer for sale if its cost of production increases while prices remain the same?


**A** When prices go down, the amount offered for sale will also go down. Each unit of production will cost more. There will be a decrease in supply.

Click the mouse button or press the Space Bar to display the answer.



126


**Applying Economic Skills** (cont.)



**Q** **Marginal Analysis** Give an example of a recent decision you made in which you used the tools of marginal analysis.


**A** Examples should reflect an understanding of marginal analysis.

Click the mouse button or press the Space Bar to display the answer.



127


**Chapter Bonus Question**



**Q** Suppose economists predict that the price of oil will rise by 25 percent in the next two years. How might this affect the number of wildcatters—people who drill for oil in hopes of finding new supplies?

**A** The number of wildcatters would likely go up, as more people would seek oil to sell at higher prices.

Click the mouse button or press the Space Bar to display the answer.



128



**END OF THE**  
**Chapter**  
**2000**  
**Assessment**

Click the mouse button to return to the Contents slide.

**ECONOMIC CONCEPTS** Transparency 8

**SUPPLY AND DEMAND**

This photograph illustrates a problem of supply and demand in a market economy: too little demand during the Great Depression.

**FOCUS ACTIVITIES** Transparency 13

**SUPPLY AND PRICES**

**THE LAW OF SUPPLY**  
The quantities of an economic product offered for sale vary directly with its price. If prices are high, suppliers will offer greater quantities for sale. If prices are low, they will offer smaller quantities for sale.

1. According to the Law of Supply, is the relationship between price and quantity supplied direct or indirect?
2. Explain why producers supply greater quantities of a good or a service when prices rise.

Continued on next slide.

**FOCUS ACTIVITIES** Transparency 13

**SUPPLY AND PRICES**

**THE LAW OF SUPPLY**  
The quantities of an economic product offered for sale vary directly with its price. If prices are high, suppliers will offer greater quantities for sale. If prices are low, they will offer smaller quantities for sale.

1. According to the Law of Supply, is the relationship between price and quantity supplied direct or indirect?
2. Explain why producers supply greater quantities of a good or a service when prices rise.

Because the producer is receiving payment for his or her products, it stands to reason that more will be offered at higher prices.

**FOCUS ACTIVITIES** Transparency 23

### THE THEORY OF PRODUCTION

A change in One or More of the **FACTORS OF PRODUCTION** Result in a change in the **OUTPUT OF GOODS OR SERVICES**

1. What are the four factors of production?
2. How does the diagram show a cause-effect relationship?

2000 Continued on next slide. ? < >

**FOCUS ACTIVITIES** Transparency 23

### THE THEORY OF PRODUCTION

A change in One or More of the **FACTORS OF PRODUCTION** Result in a change in the **OUTPUT OF GOODS OR SERVICES**

1. What are the four factors of production?  
land, labor, capital, and entrepreneurship
2. How does the diagram show a cause-effect relationship?  
The left-to-right arrows and the text show that a change in the factors of production causes a change in output.

2000 ? < >

**FOCUS ACTIVITIES** Transparency 24

### COSTS, REVENUES, AND PROFITS

Units Sold	Fixed Costs	
X	+	
Average Price Per Unit	Variable Costs	
TOTAL REVENUE		- TOTAL COSTS =
		PROFIT or LOSS

1. How are total costs calculated? Total revenues?
2. How is profit related to costs and revenues?

2000 Continued on next slide. ? < >

**FOCUS ACTIVITIES** Transparency 24

### COSTS, REVENUES, AND PROFITS

Units Sold	Fixed Costs	
X	+	
Average Price Per Unit	Variable Costs	
TOTAL REVENUE		- TOTAL COSTS =
		PROFIT or LOSS

1. How are total costs calculated? Total revenues?  
by adding fixed costs and variable costs; by multiplying the number of units sold times the average price
2. How is profit related to costs and revenues?  
A profit results when total revenues exceed total costs; a loss results when total costs exceed total revenues.

2000 ? < >



Monitor television newscasts and newspapers to find three stories that discuss supply. Write a brief explanation of how the situation in each story might affect price and supply.



Explore online information about the topics introduced in this chapter.

Click on the **Connect** button to launch your browser and go to the *Economics: Principles and Practices* Web site. At this site, you will find interactive activities, current events information, and Web sites correlated with the chapters and units in the textbook. When you finish exploring, exit the browser program to return to this presentation. If you experience difficulty connecting to the Web site, manually launch your Web browser and go to <http://epp.glencoe.com>



Explore online information about the topics introduced in this chapter.

Click on the **Connect** button to launch your browser and go to the *BusinessWeek* Web site. At this site, you will find up-to-date information dealing with all aspects of economics. When you finish exploring, exit the browser program to return to this presentation. If you experience difficulty connecting to the Web site, manually launch your Web browser and go to <http://www.businessweek.com>



**Measures of Cost** Variable costs represent expenses a corporation incurs that change with that company's level of business activity. Fixed costs represent expenses a corporation incurs that remain relatively stable despite a change in the level of that company's business activity. Expense items which generally remain fixed for any given reporting period include rent, depreciation, property tax, and executive salaries.





**Master Marketer** Giving a gift to a business partner from another culture must be considered carefully. Some American businesspeople decided to send crystal clocks to their Chinese business partners. Luckily, before the gifts were sent, the Americans discovered that clocks are seen as symbols of death in China.



**Oil Supply** OPEC, the Organization of Petroleum Exporting Countries, uses adjustments in oil production to counter changes in prices. In the late 1990s, just after OPEC agreed to increase production, the Asian economy unexpectedly collapsed. With demand down, an oil glut resulted, and oil prices fell sharply. In time, the members of OPEC agreed to cut production, leading to a rise in oil prices.



All costs are variable in the long run.



**Technology and Farming** Many U.S. farmers now use computers, the Internet, and e-mail to get information about the supply of crops that will come to market, prices offered, yield per acre, and other data. This information helps farmers decide how much to plant and where to sell their products. State agricultural departments and universities have Web sites to help farmers use electronic information effectively.





## New Directions for PC Markets

The price of the average desktop computer shrank by 17.3% in just one year. As prices continue to fall, computer makers are scrambling to find other ways to make a profit.

Read the *BusinessWeek* Newsclip article on page 126 of your textbook. Learn how computer makers are finding other ways to make a profit.

Continued on next slide.

This feature is found on page 126 of your textbook. Click the Speaker button to listen to an audio introduction.



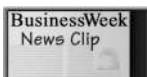
## New Directions for PC Markets

**Q** Understanding Cause and Effect  
Why are companies moving away from producing PCs?

**A** The price of PCs has been plummeting for the past two years. Companies are not producing as many PCs because they are not making much profit from them.

Continued on next slide.

Click the mouse button or press the Space Bar to display the answer. This feature is found on page 126 of your textbook.



## New Directions for PC Markets

**Q** Making Generalizations What are some companies doing in order to stay competitive in the computer industry?

**A** Some companies are developing e-commerce business and producing non-PC products like cell phones and Web access machines.

Click the mouse button or press the Space Bar to display the answer. This feature is found on page 126 of your textbook.



## Economics and You Video 6: What Is Supply?

### Objectives

After viewing *What Is Supply?*, you should be able to: ↴

- Explain the law of supply. ↴
- Identify some factors that can cause a change in the supply of a product. ↴
- Define marginal product.

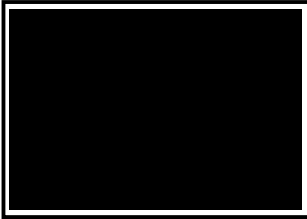
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Click the mouse button or press the Space Bar to display the information.





## Economics and You Video 6: What Is Supply?



Side 1  
Disc 1  
Chapter 6

Click the **Videodisc** button anytime throughout this section to play the complete video if you have a videodisc player attached to your computer.

Click the **Forward** button to view the discussion questions and other related slides.

Continued on next slide.



## Economics and You Video 6: What Is Supply?

**Q** What is the law of supply?

**A** The law of supply states that when prices of a product are higher, sellers will supply a larger quantity of the product.



Side 1  
Disc 1  
Chapter 6

Click the mouse button or press the Space Bar to display the answer.



## Outlining

Outlining may be used as a starting point for a writer. The writer begins with the rough shape of the material and gradually fills in the details in a logical manner. You may also use outlining as a method of note taking and organizing information as you read.

Continued on next slide.

This feature is found on page 132 of your textbook.



## Outlining

### Learning the Skill

- There are two types of outlines—formal and informal. Making an informal outline is similar to taking notes—you write words and phrases needed to remember main ideas. A formal outline has a standard format. Follow these steps to formally outline material. ↴
  - Read the text to identify the main ideas. Label these with Roman numerals.

Continued on next slide.

Click the mouse button or press the Space Bar to display the information. This feature is found on page 132 of your textbook.





## Outlining

### Learning the Skill (cont.)

- Write subtopics under each main idea. Label these ideas with capital letters. ↴
- Write supporting details for each subtopic. Label these with Arabic numerals. ↴
- Each level should have at least two entries and should be indented from the level above. ↴
- All entries use the same grammatical form, whether phrases or complete sentences.

Continued on next slide.

Click the mouse button or press the Space Bar to display the information. This feature is found on page 132 of your textbook.



## Outlining

### Practicing the Skill

- On a separate sheet of paper, copy the outline on page 132 of your textbook of the main ideas in the first part of Section 1 of Chapter 5. ↴
- Then use your textbook to fill in the missing subtopics and details.

Click the mouse button or press the Space Bar to display the information. This feature is found on page 132 of your textbook.



Click a picture on the following slide to learn more about Richard Sears, Milton Hershey, or John Johnson. Be prepared to answer the questions that follow.

Continued on next slide.

This feature is found on page 121 of your textbook.



Richard Sears



Milton Hershey



John Johnson

Continued on next slide.

This feature is found on page 121 of your textbook.





**Q Making Generalizations** Explain how persistence played a role in the success of each of these men.

**A** Answers will vary. Sears persisted for 24 years before he opened his first retail store; Hershey was poor, uneducated, a multiple-business failure, and broke before he achieved success; Johnson persisted in the face of racism.

Continued on next slide.

Click the mouse button or press the Space Bar to display the answer. This feature is found on page 121 of your textbook.



**Q For Further Research** Find out the etymology of *entrepreneur* and explain why the word is used as it is today.

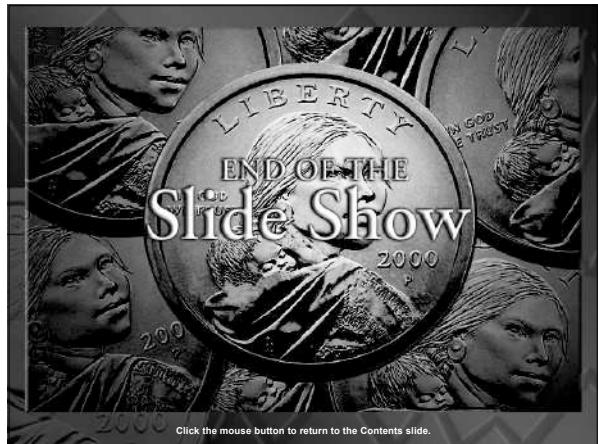
**A** The word *entrepreneur* comes from the French, and it means "one who undertakes some task." Its deeper root is Latin, originating in words that mean "to grasp" or "to seize." It shares these roots with the word "enterprise." Entrepreneurship thus means something akin to seizing an opportunity. Today, it denotes one who seizes a business opportunity.

Click the mouse button or press the Space Bar to display the answer. This feature is found on page 121 of your textbook.



### End of Custom Shows WARNING! Do Not Remove

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Click the mouse button to return to the Contents slide.