

Chapter 22

The Firm: Cost and Output Determination

22.1 Short Run versus Long Run

- 1) Economists generally define the short run as being
- A) that period of time in which at least one of the firm's inputs, usually plant size, is fixed.
 - B) that period of time in which all inputs are variable.
 - C) any period of time less than one year.
 - D) any period of time less than six months.

Answer: A

Diff: 1

Topic: 22.1 Short Run versus Long Run

Question Status: Previous Edition

- 2) Which of the following is TRUE about the long run?
- A) All resources are variable.
 - B) All resources are fixed.
 - C) At least one resource is fixed.
 - D) None of the above.

Answer: A

Diff: 1

Topic: 22.1 Short Run versus Long Run

Question Status: Previous Edition

- 3) Which of the following is a short-run decision for a firm?
- A) Downsizing the firm's manufacturing plant
 - B) Expanding the firm's distribution network of long-haul freight trucks and smaller delivery trucks.
 - C) Firing workers
 - D) Investing in a new addition to the firm's manufacturing plant

Answer: C

Diff: 1

Topic: 22.1 Short Run versus Long Run

AACSB: Analytic skills

Question Status: Previous Edition

- 4) The focus of firm decisions in the short run is primarily on
- A) variable inputs.
 - B) capital investment.
 - C) plant size.
 - D) economies of scale.

Answer: A

Diff: 2

Topic: 22.1 Short Run versus Long Run

AACSB: Analytic skills

Question Status: Previous Edition

- 5) Which of the following would NOT be a short-run decision for the firm?
- A) Recall workers who were previously laid-off
 - B) Have labor work two hours overtime each day in order to expand output
 - C) Build another wing on the plant in order to add a new assembly line
 - D) Place an order with a supplier for additional raw materials

Answer: C

Diff: 1

Topic: 22.1 Short Run versus Long Run

AACSB: Analytic skills

Question Status: Previous Edition

- 6) A basic distinction between the long run and the short run is that
- A) if a firm produces no output in the long run, it still incurs a cost.
 - B) the opportunity costs of production are lower in the short run than in the long run.
 - C) in the long run, some inputs are fixed, while in the short run, all inputs are variable.
 - D) in the short run, complete adjustment of all inputs is impossible, while in the long run all inputs can be adjusted.

Answer: D

Diff: 1

Topic: 22.1 Short Run versus Long Run

Question Status: Previous Edition

- 7) During the short run, a firm cannot
- A) increase its use of labor.
 - B) change its plant size.
 - C) purchase more raw materials.
 - D) change its variable costs.

Answer: B

Diff: 1

Topic: 22.1 Short Run versus Long Run

Question Status: Previous Edition

- 8) For a hotdog vender, the hotdog stand represents his
- A) fixed input.
 - B) variable input.
 - C) diseconomies of scale.
 - D) none of the above.

Answer: A

Diff: 2

Topic: 22.1 Short Run versus Long Run

AACSB: Reflective thinking skills

Question Status: Previous Edition

- 9) For a hotdog vender, the hotdog buns represents his
- A) fixed input.
 - B) variable input.
 - C) sunk cost.
 - D) none of the above.

Answer: B

Diff: 2

Topic: 22.1 Short Run versus Long Run

AACSB: Reflective thinking skills

Question Status: New

- 10) The time period during which a firm's capital is fixed but its labor is variable is called
- A) the planning horizon.
 - B) the short run.
 - C) the long run.
 - D) the very long run.

Answer: B

Diff: 1

Topic: 22.1 Short Run versus Long Run

Question Status: Previous Edition

- 11) The long run is defined as the time period in which
- A) the firm can vary only one input.
 - B) the firm can make positive economic profits.
 - C) all factors of production can be altered.
 - D) the firm can alter its rate of production.

Answer: C

Diff: 1

Topic: 22.1 Short Run versus Long Run

Question Status: Previous Edition

- 12) A fixed resource is one that
- A) is physically tied to a specific location.
 - B) costs more than the average daily revenue of the firm.
 - C) cannot be varied in the short run.
 - D) can be disposed of only if the firm goes out of business.

Answer: C

Diff: 1

Topic: 22.1 Short Run versus Long Run

Question Status: Previous Edition

- 13) Which of the following would be a fixed input to an automobile firm?
- A) Steel
 - B) A factory in Detroit
 - C) Car batteries
 - D) Engineers

Answer: B

Diff: 2

Topic: 22.1 Short Run versus Long Run

AACSB: Reflective thinking skills

Question Status: Previous Edition

- 14) Which of the following would be a fixed input for an amusement park?
- A) Ticket takers
 - B) Unpopped popcorn
 - C) Concession workers
 - D) The roller coaster

Answer: D

Diff: 1

Topic: 22.1 Short Run versus Long Run

AACSB: Reflective thinking skills

Question Status: Previous Edition

15) Mr. James' company produces candy bars. Which is NOT a variable input for this firm?

- A) Sugar
- B) Assembly line workers
- C) The big chocolate-stirring machines
- D) Packaging materials

Answer: C

Diff: 2

Topic: 22.1 Short Run versus Long Run

AACSB: Reflective thinking skills

Question Status: Previous Edition

16) In economics, how long is the long run?

- A) More than 12 months
- B) 24 months or longer
- C) 5 years or more
- D) Whatever time it takes a firm to vary all inputs

Answer: D

Diff: 2

Topic: 22.1 Short Run versus Long Run

AACSB: Analytic skills

Question Status: Previous Edition

17) The short run is

- A) a year or less.
- B) up to three years.
- C) the period of time in which the firm can vary its rate of output.
- D) the period of time in which the firm cannot change its use of at least one input.

Answer: D

Diff: 1

Topic: 22.1 Short Run versus Long Run

Question Status: Previous Edition

18) The time period during at least one input cannot be changed is the

- A) production time.
- B) calendar year.
- C) long run.
- D) short run.

Answer: D

Diff: 1

Topic: 22.1 Short Run versus Long Run

Question Status: Previous Edition

19) The time period during which all factors of production can be varied is the

- A) production time.
- B) calendar year.
- C) long run.
- D) short run.

Answer: C

Diff: 1

Topic: 22.1 Short Run versus Long Run

Question Status: Previous Edition

- 20) Ajax Corporation has recently finished building a new factory. They moved into the factory a month ago and found that it is the perfect size given the amount they want to produce. Ajax is operating in the

A) production time. B) corporation time.
C) long run. D) short run.

Answer: C

Diff: 2

Topic: 22.1 Short Run versus Long Run

AACSB: Analytic skills

Question Status: Previous Edition

- 21) If the firm can vary all factors of production, it is operating

A) at a profit. B) at a zero economic profit.
C) in the short run. D) in the long run.

Answer: D

Diff: 1

Topic: 22.1 Short Run versus Long Run

Question Status: Previous Edition

- 22) The difference between the short run and the long run is

A) economic profits are negative in the short run and positive in the long run.
B) economic and accounting profits are not equal in the short run but are equal in the long run.
C) that in the short run at least one factor of production cannot be varied while in the long run all factors of production can be varied.
D) the short run is a period less than a year while the long run is a period greater than a year.

Answer: C

Diff: 1

Topic: 22.1 Short Run versus Long Run

Question Status: Previous Edition

- 23) Which of the following statements is not true about the short run and the long run?

A) The short run for a firm is today while the long run is next week.
B) These terms apply to the planning decisions of firms.
C) The firm is always operating in the short run.
D) In the short run, the firm can change the amount of variable inputs.

Answer: A

Diff: 2

Topic: 22.1 Short Run versus Long Run

AACSB: Analytic skills

Question Status: Previous Edition

- 24) For a wheat farmer in the middle of harvesting system, a fixed input would be

A) workers hired. B) combines rented.
C) the land that had been planted. D) trucks rented to haul the wheat.

Answer: C

Diff: 2

Topic: 22.1 Short Run versus Long Run

AACSB: Reflective thinking skills

Question Status: Previous Edition

- 25) The best way to think of the short run and the long run is as
- A) specific periods of time, although the time periods may differ across industries.
 - B) planning terms that apply to managers.
 - C) concepts that apply to all people who work for a firm.
 - D) a concept that only accountants are concerned with.

Answer: A

Diff: 3

Topic: 22.1 Short Run versus Long Run

AACSB: Analytic skills

Question Status: Previous Edition

- 26) For a firm, we define the short run as a period of time during which
- A) at least one input cannot be changed.
 - B) all inputs can be changed.
 - C) only the plant size can be changed.
 - D) all inputs cannot be changed.

Answer: A

Diff: 2

Topic: 22.1 Short Run versus Long Run

Question Status: Previous Edition

- 27) The short run is
- A) a period of time during which at least one input cannot be changed.
 - B) a period of time during which no inputs can be changed.
 - C) a period of time during which all inputs can be changed.
 - D) a period of time shorter than one year.

Answer: A

Diff: 2

Topic: 22.1 Short Run versus Long Run

Question Status: Previous Edition

- 28) For an economist, the short run means a time period
- A) during which new firms are prohibited from entering the industry.
 - B) during which firms are not allowed to change the amount of imported resources they use.
 - C) that is between one and five years.
 - D) during which the firm is unable to change its plant size.

Answer: D

Diff: 1

Topic: 22.1 Short Run versus Long Run

Question Status: Previous Edition

- 29) When El Torito Restaurant is deciding how many waiters to hire for a holiday weekend, it is making a _____ decision.
- A) plant-size
 - B) long-run
 - C) short-run
 - D) fixed-input

Answer: C

Diff: 2

Topic: 22.1 Short Run versus Long Run

AACSB: Reflective thinking skills

Question Status: Previous Edition

30) In the long run, a firm can change

- A) nothing.
- C) all inputs.

- B) only one input, such as plant size.
- D) None of the above are correct.

Answer: C

Diff: 2

Topic: 22.1 Short Run versus Long Run

Question Status: Previous Edition

31) The amount of calendar time associated with the long run

- A) is less than five years.
- C) is between one and five years.

- B) is greater than one year.
- D) varies by industry.

Answer: D

Diff: 1

Topic: 22.1 Short Run versus Long Run

AACSB: Analytic skills

Question Status: Previous Edition

32) If Microsoft is determining whether to build a new plant in Southern California or in New Mexico, it is making a(n) _____ decision.

- A) immediate-run
- C) short-run

- B) long-run
- D) variable-input

Answer: B

Diff: 2

Topic: 22.1 Short Run versus Long Run

AACSB: Reflective thinking skills

Question Status: Previous Edition

33) The time frame in which all factors of production can vary is

- A) the short run.
- C) the long run.

- B) the intermediate run.
- D) indeterminate.

Answer: C

Diff: 1

Topic: 22.1 Short Run versus Long Run

Question Status: Previous Edition

34) If a firm can vary all of its factors of production, it is operating in

- A) the long run.
- C) equilibrium.

- B) the immediate run.
- D) the short run.

Answer: A

Diff: 1

Topic: 22.1 Short Run versus Long Run

Question Status: Previous Edition

35) Which of the following is a long-run adjustment?

- A) A restaurant hires a new chef.
- B) A company builds a new manufacturing plant.
- C) A bank hires a new CEO.
- D) A company hires ten new management trainees.

Answer: B

Diff: 1

Topic: 22.1 Short Run versus Long Run

AACSB: Analytic skills

Question Status: Previous Edition

36) If a farmer seeks to buy one-hundred more acres for her kiwi fruit farm, she is making a

- A) long-run decision.
- B) short-run decision.
- C) immediate-run decision.
- D) variable-input decision.

Answer: A

Diff: 1

Topic: 22.1 Short Run versus Long Run

AACSB: Analytic skills

Question Status: Previous Edition

37) What is the difference between the short run and the long run? What is the appropriate time dimension of the long run?

Answer: The short run is the time period when at least one input cannot be changed and the long run is the time period when all inputs can be varied. There is no appropriate time dimension for the long run. It depends on the production processes used by firms.

Diff: 2

Topic: 22.1 Short Run versus Long Run

AACSB: Analytic skills

Question Status: Previous Edition

38) "In the short run, a firm cannot change any of its inputs." Do you agree or disagree? Explain.

Answer: Disagree. The short run is a period that is so short that the firm cannot change at least one of its inputs. In other words, it can still change other inputs, known as variable inputs.

Diff: 2

Topic: 22.1 Short Run versus Long Run

AACSB: Analytic skills

Question Status: Previous Edition

39) "In economics, the short run commonly refers to a period within one year and the long run is a period longer than one year." Do you agree or disagree? Explain your answer.

Answer: Disagree. The time period of the short run versus the long run depends on each individual industry. In economics, the short run is the period during which at least one input cannot be changed, while the long run is the period long enough so that all inputs can change.

Diff: 2

Topic: 22.1 Short Run versus Long Run

AACSB: Analytic skills

Question Status: Previous Edition

22.2 The Relationship Between Output and Inputs

- 1) Production functions indicate the relationship between
- | | |
|---|--|
| A) factor costs and output prices. | B) factor inputs and the quantity of output. |
| C) the value of inputs and average costs. | D) factor inputs and factor prices. |

Answer: B

Diff: 1

Topic: 22.2 The Relationship Between Output and Inputs

Question Status: Previous Edition

- 2) Suppose that one worker can produce 15 cookies, two workers can produce 35 cookies together, and three workers can produce 65 cookies together. What is the marginal product of the 2nd worker?
- | | | | |
|---------------|---------------|---------------|---------------|
| A) 15 cookies | B) 20 cookies | C) 30 cookies | D) 35 cookies |
|---------------|---------------|---------------|---------------|

Answer: B

Diff: 1

Topic: 22.2 The Relationship Between Output and Inputs

AACSB: Analytic skills

Question Status: Previous Edition

- 3) Suppose that one worker can produce 15 cookies, two workers can produce 35 cookies together, and three workers can produce 65 cookies together. What is the marginal product of the 3rd worker?
- | | | | |
|------------------|---------------|---------------|---------------|
| A) 21.67 cookies | B) 65 cookies | C) 30 cookies | D) 35 cookies |
|------------------|---------------|---------------|---------------|

Answer: C

Diff: 1

Topic: 22.2 The Relationship Between Output and Inputs

AACSB: Analytic skills

Question Status: New

- 4) Suppose that one worker can produce 15 cookies, two workers can produce 35 cookies together, and three workers can produce 65 cookies together. What is the average product of the first two workers?
- | | | | |
|---------------|---------------|-----------------|---------------|
| A) 15 cookies | B) 20 cookies | C) 17.5 cookies | D) 35 cookies |
|---------------|---------------|-----------------|---------------|

Answer: C

Diff: 1

Topic: 22.2 The Relationship Between Output and Inputs

AACSB: Analytic skills

Question Status: New

- 5) Suppose that one worker can produce 15 cookies, two workers can produce 35 cookies together, and three workers can produce 65 cookies together. What is the average product of the first three workers?
- | | | | |
|---------------|---------------|-----------------|------------------|
| A) 65 cookies | B) 30 cookies | C) 17.5 cookies | D) 21.67 cookies |
|---------------|---------------|-----------------|------------------|

Answer: D

Diff: 1

Topic: 22.2 The Relationship Between Output and Inputs

AACSB: Analytic skills

Question Status: New

- 6) When a firm uses technological improvements to increase output from the same amount of inputs, the result is
- A) a new production function.
 - B) losses.
 - C) guaranteed profits.
 - D) diseconomies of scale.

Answer: A

Diff: 1

Topic: 22.2 *The Relationship Between Output and Inputs*

AACSB: *Analytic skills*

Question Status: *Previous Edition*

- 7) The concept of the production function implies that a firm using resources inefficiently will
- A) obtain less output than the theoretical production function shows.
 - B) obtain more output than the theoretical production function shows.
 - C) obtain exactly the amount that the theoretical production function shows.
 - D) not be subject to diminishing marginal product.

Answer: A

Diff: 1

Topic: 22.2 *The Relationship Between Output and Inputs*

AACSB: *Analytic skills*

Question Status: *Previous Edition*

- 8) Changes in production functions are associated with changes in
- A) the level of output.
 - B) demand.
 - C) the levels of costs.
 - D) technology.

Answer: D

Diff: 1

Topic: 22.2 *The Relationship Between Output and Inputs*

AACSB: *Analytic skills*

Question Status: *Previous Edition*

- 9) Which of the following statements is FALSE?
- A) Included in the firm's short-run production function are both fixed and variable inputs.
 - B) An efficient firm can obtain more output than the production function shows.
 - C) The production function shows the technical relationship between a firm's inputs and outputs.
 - D) The production function presents the technically efficient methods of combining inputs to produce output.

Answer: B

Diff: 1

Topic: 22.2 *The Relationship Between Output and Inputs*

AACSB: *Analytic skills*

Question Status: *Previous Edition*

- 10) Fred's Franks originally sold hotdogs and soft drinks from a cart located in front of City Hall. Then Fred purchased another hotdog cart and hired someone to sell hotdogs and soft drinks near the high school. Both locations have been successful. When Fred's Franks expanded to two locations, which of the following did NOT occur?
- A) Fred's production function changed.
 - B) Production increased.
 - C) The company increased the inputs it employs.
 - D) The firm employed additional capital.

Answer: A

Diff: 2

Topic: 22.2 The Relationship Between Output and Inputs

AACSB: Analytic skills

Question Status: Previous Edition

- 11) Which of the following changes a firm's production function?
- A) Hiring additional workers
 - B) Acquiring additional physical capital
 - C) Adding a second production facility exactly like its first production site
 - D) Adopting new technology

Answer: D

Diff: 2

Topic: 22.2 The Relationship Between Output and Inputs

AACSB: Analytic skills

Question Status: Previous Edition

- 12) A negative value for the marginal physical product would indicate that
- A) the company has not yet reached the point of saturation.
 - B) total output increased by a significant amount.
 - C) total output decreased when the extra unit of the variable input was added.
 - D) total output increased, but the increase was very small.

Answer: C

Diff: 1

Topic: 22.2 The Relationship Between Output and Inputs

AACSB: Analytic skills

Question Status: Previous Edition

- 13) If the marginal product curve is increasing from workers 1–89 and then decreases steadily, crossing the horizontal axis at 190 workers, we know that
- A) the total output curve increases from workers 1–89, decreases from workers 90–189, and becomes 0 at the 190th worker.
 - B) the total output curve is increasing at an increasing rate from workers 1–89, then increases at a decreasing rate until the 190th worker, after which it decreases.
 - C) the total output curve is increasing throughout, although at an increasing rate for the first 190 workers and at a decreasing rate after the 190th worker.
 - D) diminishing marginal product sets in with the 190th worker.

Answer: B

Diff: 3

Topic: 22.2 The Relationship Between Output and Inputs

AACSB: Analytic skills

Question Status: Previous Edition

- 14) If marginal product is negative, then

A) total product is rising. B) total product is falling.
C) marginal cost is falling. D) average profit is rising.

Answer: B

Diff: 2

Topic: 22.2 *The Relationship Between Output and Inputs*

AACSB: Analytic skills

Question Status: Previous Edition

- 15) Marginal physical product of the first worker is 100, 120 for the second, 80 for the third, 30 for the fourth, 5 for the fifth, 3 for the sixth, 2 for the seventh, 1 for the eighth, and 0 for the ninth. What is total product for the fifth worker and the ninth worker respectively?

A) 335; 341 B) 335; 0 C) 5; 0 D) 0; 5

Answer: A

Diff: 2

Topic: 22.2 *The Relationship Between Output and Inputs*

AACSB: Analytic skills

Question Status: Revised

- 16) When total product is rising,

A) fixed cost must be rising. B) marginal product must be positive.
C) variable cost must be declining. D) marginal product must be negative.

Answer: B

Diff: 1

Topic: 22.2 *The Relationship Between Output and Inputs*

AACSB: Analytic skills

Question Status: Previous Edition

- 17) If in the short run total product is decreasing as more workers are hired, then the marginal physical product is

A) increasing. B) zero. C) negative. D) positive.

Answer: C

Diff: 2

Topic: 22.2 *The Relationship Between Output and Inputs*

AACSB: Analytic skills

Question Status: Previous Edition

- 18) The production function

A) shows the maximum level of output for a given set of inputs.
B) is an economic relationship between revenue and cost.
C) shows the relationship between input prices and amount of input used.
D) always shows increasing marginal product of labor.

Answer: A

Diff: 1

Topic: 22.2 *The Relationship Between Output and Inputs*

Question Status: Previous Edition

Input of Labor (no. of workers in weeks)	Total Product (no. of snowboards produced)
0	0
1	30
2	68
3	110
4	140
5	135

- 19) In the above table, average physical product is 30 snowboards when
- A) 4 workers are employed. B) 3 workers are employed.
C) 2 workers are employed. D) 1 worker is employed.

Answer: D

Diff: 1

Topic: 22.2 The Relationship Between Output and Inputs

AACSB: Analytic skills

Question Status: Previous Edition

- 20) In the above table, when the firm employs 4 workers, the marginal product will be
- A) 140 snowboards. B) 30 snowboards.
C) 35 snowboards. D) 208 snowboards.

Answer: B

Diff: 1

Topic: 22.2 The Relationship Between Output and Inputs

AACSB: Analytic skills

Question Status: Previous Edition

- 21) In the above table, when the firm employs 3 workers, the marginal product will be
- A) 42 snowboards. B) 30 snowboards.
C) 36.67 snowboards. D) 208 snowboards.

Answer: A

Diff: 1

Topic: 22.2 The Relationship Between Output and Inputs

AACSB: Analytic skills

Question Status: New

- 22) In the above table, how many workers are employed when marginal product reaches its maximum?
- A) 1 B) 2 C) 3 D) 4

Answer: C

Diff: 1

Topic: 22.2 The Relationship Between Output and Inputs

AACSB: Analytic skills

Question Status: Previous Edition

- 23) In the above table, diminishing marginal product occurs after employing the
- A) first worker.
 - B) second worker.
 - C) third worker.
 - D) fourth worker.

Answer: C

Diff: 1

Topic: 22.2 The Relationship Between Output and Inputs

AACSB: Analytic skills

Question Status: Previous Edition

- 24) In the above table, marginal product becomes negative after employing the
- A) second worker.
 - B) third worker.
 - C) fourth worker.
 - D) fifth worker.

Answer: C

Diff: 1

Topic: 22.2 The Relationship Between Output and Inputs

AACSB: Analytic skills

Question Status: Previous Edition

- 25) In the above table, the marginal product of the second worker is
- A) 68.
 - B) 98.
 - C) 38.
 - D) It cannot be determined.

Answer: C

Diff: 1

Topic: 22.2 The Relationship Between Output and Inputs

AACSB: Analytic skills

Question Status: Previous Edition

- 26) In the above table, the average product of the fifth worker is
- A) 35.
 - B) 135.
 - C) -5.
 - D) 27.

Answer: D

Diff: 1

Topic: 22.2 The Relationship Between Output and Inputs

AACSB: Analytic skills

Question Status: New

- 27) In the above table, which two workers have the same marginal physical product?
- A) 1 and 2
 - B) 2 and 4
 - C) 1 and 3
 - D) 1 and 4

Answer: D

Diff: 2

Topic: 22.2 The Relationship Between Output and Inputs

AACSB: Analytic skills

Question Status: Previous Edition

- 28) The marginal physical product of labor is calculated assuming other factor inputs
- A) increase more than proportionately.
 - B) increase less than proportionately.
 - C) remain constant.
 - D) decrease.

Answer: C

Diff: 1

Topic: 22.2 The Relationship Between Output and Inputs

Question Status: Previous Edition

- 33) According to the above table, what is the average product of labor when three laborers are employed?

A) 3 B) 4 C) 5 D) 6

Answer: D

Diff: 1

Topic: 22.2 *The Relationship Between Output and Inputs*

AACSB: Analytic skills

Question Status: Previous Edition

- 34) According to the above table, what is the marginal product of the 5th unit of labor?

A) 3 B) 4 C) 5.2 D) 5

Answer: A

Diff: 1

Topic: 22.2 *The Relationship Between Output and Inputs*

AACSB: Analytic skills

Question Status: New

- 35) According to the above table, what is the average product of labor when five laborers are employed?

A) 3 B) 5.2 C) 5.75 D) 6

Answer: B

Diff: 1

Topic: 22.2 *The Relationship Between Output and Inputs*

AACSB: Analytic skills

Question Status: New

- 36) Production

- A) is a process by which resources are produced.
- B) is a process by which resources are transferred into goods and services.
- C) only applies to manufacturing of goods.
- D) is carried on by corporations, but not by sole proprietorships.

Answer: B

Diff: 1

Topic: 22.2 *The Relationship Between Output and Inputs*

Question Status: Previous Edition

- 37) Any activity that results in the conversion of resources into products that can be used in consumption is

A) planning. B) investment. C) production. D) discounting.

Answer: C

Diff: 1

Topic: 22.2 *The Relationship Between Output and Inputs*

Question Status: Previous Edition

- 38) The relationship $Q = f(K, L)$ is an example of a

- A) cost function.
- B) production function.
- C) demand equation.
- D) profit equation.

Answer: B

Diff: 2

Topic: 22.2 *The Relationship Between Output and Inputs*

Question Status: Previous Edition

39) Which of the following activities is not included in the production process?

- A) Determining the value of the goods
- B) Making the goods
- C) Packaging the goods
- D) Transporting the goods

Answer: A

Diff: 2

Topic: 22.2 The Relationship Between Output and Inputs

AACSB: Analytic skills

Question Status: Previous Edition

40) The production function

- A) gives the maximum amount of output for a given level of inputs.
- B) gives the implicit costs for all inputs.
- C) gives the amount of time necessary to reach the long run.
- D) allows us to compute the difference between accounting and economic profits.

Answer: A

Diff: 1

Topic: 22.2 The Relationship Between Output and Inputs

Question Status: Previous Edition

41) Which of the following statements is not true about the production function?

- A) It gives the maximum output that can be obtained for a given level of inputs.
- B) A new production function does not have to be developed when there is technical progress since technology is included in the function.
- C) The production function depends upon the level of technology available to the firm.
- D) It specifies the cost of inputs necessary to produce a certain level of outputs.

Answer: B

Diff: 2

Topic: 22.2 The Relationship Between Output and Inputs

AACSB: Analytic skills

Question Status: Previous Edition

42) The relationship between inputs and outputs is known as

- A) business.
- B) manufacturing.
- C) a production function.
- D) marginal product.

Answer: C

Diff: 1

Topic: 22.2 The Relationship Between Output and Inputs

Question Status: Previous Edition

43) A production function is a(n)

- A) cost relationship.
- B) economic relationship.
- C) accounting relationship.
- D) technological relationship.

Answer: D

Diff: 1

Topic: 22.2 The Relationship Between Output and Inputs

AACSB: Analytic skills

Question Status: Previous Edition

- 44) The production function does not provide information about
- A) the technology used in the production process.
 - B) the types of inputs used in the production process.
 - C) the relationship between changes in quantity of inputs and changes in the quantity of output.
 - D) the profits of producing a good.

Answer: D

Diff: 2

Topic: 22.2 *The Relationship Between Output and Inputs*

AACSB: Analytic skills

Question Status: Previous Edition

- 45) Another term for the total quantity of output is
- A) average physical product.
 - B) marginal physical product.
 - C) total product.
 - D) average variable product.

Answer: C

Diff: 1

Topic: 22.2 *The Relationship Between Output and Inputs*

Question Status: Previous Edition

- 46) Total product divided by the variable input is
- A) average total cost.
 - B) marginal cost.
 - C) average physical product.
 - D) marginal physical product.

Answer: C

Diff: 1

Topic: 22.2 *The Relationship Between Output and Inputs*

Question Status: Previous Edition

- 47) Marginal physical product and average physical product are measured in
- A) dollars.
 - B) profit terms.
 - C) units of production.
 - D) the same units as marginal cost and average total cost.

Answer: C

Diff: 1

Topic: 22.2 *The Relationship Between Output and Inputs*

AACSB: Analytic skills

Question Status: Previous Edition

Quantity of Labor	Total Product
1	20
2	46
3	63
4	72

- 48) Refer to the above table. When the quantity of labor equals 2, what does the average product equal?

A) 46 B) 23 C) 26 D) 92

Answer: B

Diff: 2

Topic: 22.2 The Relationship Between Output and Inputs

AACSB: Analytic skills

Question Status: Previous Edition

- 49) Refer to the above table. When the quantity of labor equals 3, what does the average product equal?

A) 21 B) 17 C) 63 D) 189

Answer: A

Diff: 2

Topic: 22.2 The Relationship Between Output and Inputs

AACSB: Analytic skills

Question Status: Previous Edition

- 50) Refer to the above table. When the quantity of labor equals 4, what does the average product equal?

A) 9 B) 18 C) 72 D) 216

Answer: B

Diff: 2

Topic: 22.2 The Relationship Between Output and Inputs

AACSB: Analytic skills

Question Status: Previous Edition

- 51) Refer to the above table. What does the marginal product equal when the quantity of labor goes from 1 to 2?

A) 46 B) 23 C) 26 D) 92

Answer: C

Diff: 2

Topic: 22.2 The Relationship Between Output and Inputs

AACSB: Analytic skills

Question Status: Previous Edition

52) Refer to the above table. What does the marginal product equal when the quantity of labor goes from 2 to 3?

- A) 21 B) 17 C) 63 D) 189

Answer: B

Diff: 2

Topic: 22.2 *The Relationship Between Output and Inputs*

AACSB: Analytic skills

Question Status: Previous Edition

53) Refer to the above table. What does the marginal product equal when the quantity of labor goes from 3 to 4?

- A) 9 B) 18 C) 72 D) 216

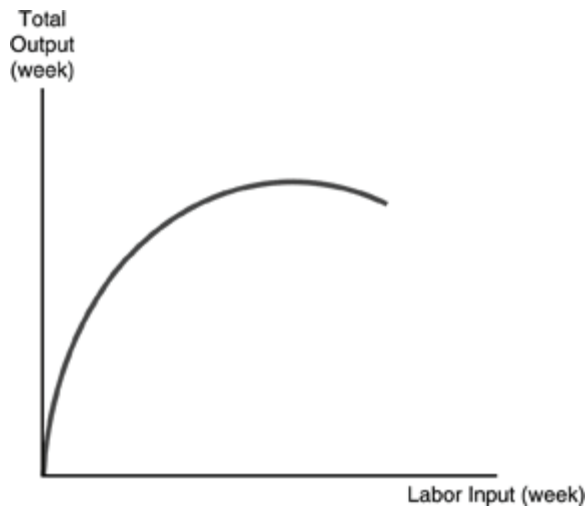
Answer: A

Diff: 2

Topic: 22.2 *The Relationship Between Output and Inputs*

AACSB: Analytic skills

Question Status: Previous Edition



54) Refer to the above figure. The curve represents a

- A) marginal product curve. B) total product curve.
C) total cost curve. D) average total cost curve.

Answer: B

Diff: 1

Topic: 22.2 *The Relationship Between Output and Inputs*

AACSB: Analytic skills

Question Status: Previous Edition

- 55) As the amount of a variable input increases, while all other inputs are held constant, total product will
- A) always increase.
 - B) always decrease.
 - C) initially decrease and then increase.
 - D) initially increase and then decrease.

Answer: D

Diff: 1

Topic: 22.2 The Relationship Between Output and Inputs

AACSB: Analytic skills

Question Status: Previous Edition

- 56) If the average product of 20 workers is 100 bushels of wheat and the average product of 21 workers of wheat is 99 bushels of wheat, then the marginal product of the 21st worker was
- A) -1 bushel of wheat.
 - B) 5 bushels of wheat.
 - C) 79 bushels of wheat.
 - D) 99 bushels of wheat.

Answer: C

Diff: 2

Topic: 22.2 The Relationship Between Output and Inputs

AACSB: Analytic skills

Question Status: Previous Edition

- 57) Marginal physical product is
- A) the change in total output from using an additional unit of one variable input, holding other inputs constant.
 - B) the change in total output from using an additional unit of all variable inputs.
 - C) the total output divided by the number of units of the variable input.
 - D) the change in total output divided by the number of units of the variable input, holding constant all other inputs.

Answer: A

Diff: 1

Topic: 22.2 The Relationship Between Output and Inputs

Question Status: Previous Edition

- 58) The change in total product occurring when a variable input is increased and all other inputs are held constant is
- A) average total cost.
 - B) marginal cost.
 - C) average physical product.
 - D) marginal physical product.

Answer: D

Diff: 1

Topic: 22.2 The Relationship Between Output and Inputs

Question Status: Previous Edition

- 59) The physical output that is due to the addition of one more unit of a variable factor of production is
- A) average total cost.
 - B) marginal cost.
 - C) average physical product.
 - D) marginal physical product.

Answer: D

Diff: 1

Topic: 22.2 The Relationship Between Output and Inputs

Question Status: Previous Edition

- 60) As the quantity of labor increases while the amount of other inputs are held constant, marginal product of labor will
- A) increase continuously.
- B) decrease continuously.
- C) initially decrease and then increase.
- D) initially increase and then decrease.

Answer: D

Diff: 1

Topic: 22.2 The Relationship Between Output and Inputs

AACSB: Analytic skills

Question Status: Previous Edition

- 61) Recently Apple Computer developed Apple's new iTunes Music Store, which offers more than 200,000 songs from five major record labels, for use with Apple's iPod and iMac. More than a million songs were downloaded the first week alone! In economic terms, CEO Steve Jobs helped convert capital and labor inputs into products consumers use. Any activity that results in the conversion of resources into products that can be used in consumption is
- A) not profitable.
B) a start up venture.
C) demand.
D) production.

Answer: D

Diff: 2

Topic: 22.2 The Relationship Between Output and Inputs

AACSB: Reflective thinking skills

Question Status: Revised

Labor	Output	Average Physical Product	Marginal Product
1	10		-
2		12	
3			15
4	52		
5			9

- 62) Using the above table, the total product and average physical product when 3 workers are employed are
- A) 36 and 12, respectively. B) 39 and 13, respectively.
C) 37 and 27, respectively. D) 40 and 10, respectively.

Answer: B

Diff: 2

Topic: 22.2 The Relationship Between Output and Inputs

AACSB: Analytic skills

Question Status: Previous Edition

- 63) Using the above table, the total product and average physical product when 5 workers are employed are
- A) 61 and 21, respectively. B) 62 and 13, respectively.
C) 62 and 15, respectively. D) 61 and 12.2, respectively.

Answer: D

Diff: 2

Topic: 22.2 The Relationship Between Output and Inputs

AACSB: Analytic skills

Question Status: Previous Edition

- 64) Using the above table, the average physical product and marginal physical when 4 workers are employed are

A) 13 and 13, respectively. B) 13 and 14, respectively.
C) 13 and 9, respectively. D) 14 and 13, respectively.

Answer: A, D

Diff: 2

Topic: 22.2 The Relationship Between Output and Inputs

AACSB: Analytic skills

Question Status: New

- 65) Using the above table, the marginal product of the 2nd worker is

A) 12. B) 14. C) 15. D) 13.

Answer: B

Diff: 2

Topic: 22.2 The Relationship Between Output and Inputs

AACSB: Analytic skills

Question Status: Previous Edition

- 66) Using the above table, the marginal product of the 4th worker is

A) 12. B) 13. C) 14. D) 15.

Answer: B

Diff: 2

Topic: 22.2 The Relationship Between Output and Inputs

AACSB: Analytic skills

Question Status: Previous Edition

Use the information from the below table to answer following question(s).

Input of Labor	Total Product
0	0
1	20
2	50
3	80
4	105
5	125
6	140
7	150

- 67) In the above table, the average product for 5 units of labor is

A) 20.0. B) 22.5. C) 25.0. D) 15.0.

Answer: C

Diff: 2

Topic: 22.2 The Relationship Between Output and Inputs

AACSB: Analytic skills

Question Status: Previous Edition

68) In the above table, the average product for 3 units of labor is

- A) 30.0. B) 26.7. C) 26.3. D) 25.0.

Answer: B

Diff: 2

Topic: 22.2 *The Relationship Between Output and Inputs*

AACSB: Analytic skills

Question Status: New

69) In the above table, the marginal product of the fourth worker is

- A) 30. B) 25. C) 20. D) 15.

Answer: B

Diff: 2

Topic: 22.2 *The Relationship Between Output and Inputs*

AACSB: Analytic skills

Question Status: Previous Edition

70) In the above table, the marginal product of the sixth worker is

- A) 10. B) 25. C) 20. D) 15.

Answer: D

Diff: 2

Topic: 22.2 *The Relationship Between Output and Inputs*

AACSB: Analytic skills

Question Status: New

71) When total product is increasing at an increasing rate, marginal product is

- A) positive and increasing. B) positive and decreasing.
C) constant. D) negative.

Answer: A

Diff: 2

Topic: 22.2 *The Relationship Between Output and Inputs*

AACSB: Analytic skills

Question Status: Previous Edition

72) When total product is increasing at a decreasing rate, marginal product is

- A) positive and increasing. B) positive and decreasing.
C) constant. D) negative.

Answer: B

Diff: 2

Topic: 22.2 *The Relationship Between Output and Inputs*

AACSB: Analytic skills

Question Status: Previous Edition

73) If four laborers were hired and we discovered that we could produce 88 units of production, what is the average physical product of labor?

- A) 44 B) 352 C) 11 D) 22

Answer: D

Diff: 2

Topic: 22.2 *The Relationship Between Output and Inputs*

AACSB: Analytic skills

Question Status: Previous Edition

74) At Phil's Hot Dog Stand, we found the following:

- 4 laborers produced 66 hot dogs
- 5 laborers produced 76 hot dogs
- 6 laborers produced 84 hot dogs
- 7 laborers produced 88 hot dogs

What was the marginal physical product of the sixth laborer?

- A) 10 hot dogs
- B) 8 hot dogs
- C) 6 hot dogs
- D) 4 hot dogs

Answer: B

Diff: 2

Topic: 22.2 The Relationship Between Output and Inputs

AACSB: Analytic skills

Question Status: Previous Edition

75) At Phil's Hot Dog Stand, we found the following:

- 4 laborers produced 66 hot dogs
- 5 laborers produced 76 hot dogs
- 6 laborers produced 84 hot dogs
- 7 laborers produced 88 hot dogs

What was the marginal physical product of the seventh laborer?

- A) 8 hot dogs
- B) 10 hot dogs
- C) 4 hot dogs
- D) none of the above due to insufficient information

Answer: C

Diff: 2

Topic: 22.2 The Relationship Between Output and Inputs

AACSB: Analytic skills

Question Status: Revised

76) The change in output caused by a one-unit change in labor is referred to as the

- A) compounded physical product of labor.
- B) average physical product of labor.
- C) marginal physical product of labor.
- D) total physical product of labor.

Answer: C

Diff: 2

Topic: 22.2 The Relationship Between Output and Inputs

Question Status: Previous Edition

77) Which of the following statement is correct?

- A) When Marginal Product is greater than Average Physical Product, Average Physical Product is increasing.
- B) When Marginal Product is greater than Average Physical Product, Average Physical Product is decreasing.
- C) When Marginal Product is greater than Average Physical Product, Average Physical Product is equal to Total Product.
- D) When Marginal Product is greater than Average Physical Product, Total Product is increasing at a decreasing rate.

Answer: A

Diff: 2

Topic: 22.2 The Relationship Between Output and Inputs

AACSB: Analytic skills

Question Status: Previous Edition

78) The average product of labor is equal to

- A) total product divided by quantity of labor.
- B) change in total product divided by quantity of labor.
- C) total product divided by change in quantity of labor.
- D) change in total product divided by change in quantity of labor.

Answer: A

Diff: 2

Topic: 22.2 The Relationship Between Output and Inputs

Question Status: Previous Edition

Quantity of Workers	Total Product	Average Physical Product	Marginal Physical Product
0	0		
1	3		
2	7		
3	12		
4	16		
5	18		
6	18		

79) In the above table, the average physical product of the 3rd worker is

- A) 5.
- B) 4.
- C) 3.
- D) 12.

Answer: B

Diff: 2

Topic: 22.2 The Relationship Between Output and Inputs

AACSB: Analytic skills

Question Status: Previous Edition

80) In the above table, the marginal physical product of the 3rd worker is

- A) 5.
- B) 4.
- C) 3.
- D) 12.

Answer: A

Diff: 2

Topic: 22.2 The Relationship Between Output and Inputs

AACSB: Analytic skills

Question Status: Previous Edition

81) In the above table, the average physical product of the 6th worker is

- A) 5. B) 4. C) 3. D) 0.

Answer: C

Diff: 2

Topic: 22.2 The Relationship Between Output and Inputs

AACSB: Analytic skills

Question Status: Previous Edition

82) In the above table, the marginal physical product of the 6th worker is

- A) 5. B) 4. C) 3. D) 0.

Answer: D

Diff: 2

Topic: 22.2 The Relationship Between Output and Inputs

AACSB: Analytic skills

Question Status: Previous Edition

83) In the above table, the average physical product of 2 workers and the marginal physical product of the 2nd worker is

- A) 2; 2. B) 4; 1. C) 3.5; 3.5. D) 3.5; 4.

Answer: D

Diff: 2

Topic: 22.2 The Relationship Between Output and Inputs

AACSB: Analytic skills

Question Status: Previous Edition

84) In the above table, the average physical product for 5 workers and the marginal physical product of the 5th worker is

- A) 3.6; 2. B) 0.72; 1. C) 2; 0.6. D) 16; 2.

Answer: A

Diff: 2

Topic: 22.2 The Relationship Between Output and Inputs

AACSB: Analytic skills

Question Status: Previous Edition

85) The production function illustrates the amount of total physical product that can be produced with a given set of

- A) inputs. B) outputs.
C) marginal product. D) marginal input.

Answer: A

Diff: 2

Topic: 22.2 The Relationship Between Output and Inputs

Question Status: Previous Edition

Quantity of Labor	Total Product	Average Product	Marginal Product
1		320	
2		335	
3			338
4			320

86) Refer to the above table. What does total product equal when 2 units of labor are used?

- A) 320 B) 335 C) 350 D) 670

Answer: D

Diff: 3

Topic: 22.2 The Relationship Between Output and Inputs

AACSB: Analytic skills

Question Status: Revised

87) Refer to the above table. What does total product equal when 3 units of labor are used?

- A) 336 B) 1008 C) 338 D) 3

Answer: B

Diff: 3

Topic: 22.2 The Relationship Between Output and Inputs

AACSB: Analytic skills

Question Status: Revised

88) Refer to the above table. What does total product equal when 4 units of labor are used?

- A) 1328 B) 332 C) 320 D) 960

Answer: A

Diff: 3

Topic: 22.2 The Relationship Between Output and Inputs

AACSB: Analytic skills

Question Status: Revised

89) Describe the concept of the production function. What happens to the production function when a firm becomes less efficient, so that it now requires more labor to produce the same amount of output as before?

Answer: The production function is the maximum possible output that can be produced with a given amount of inputs. If a firm now requires more labor to produce the same amount of output as before, then its production function either rotates downward or its curvature changes.

Diff: 2

Topic: 22.2 The Relationship Between Output and Inputs

AACSB: Analytic skills

Question Status: Previous Edition

- 90) Explain how you can calculate average physical product and marginal physical product from information on total physical product and variable input.

Answer: Given the information on total physical product and variable input, average physical product can be calculated by dividing total product by the variable input. Marginal physical product is the change in total physical output given a one-unit increase in the variable input, holding all other inputs constant. Hence, it can be computed by dividing a change in total physical output by the corresponding one-unit increase in the variable output.

Diff: 2

Topic: 22.2 The Relationship Between Output and Inputs

AACSB: Analytic skills

Question Status: Previous Edition

- 91) What is a production function?

Answer: Production is a process that transforms resources into goods or services. A production function is a relationship between inputs and output. It is a technological relationship and not an economic relationship.

Diff: 1

Topic: 22.2 The Relationship Between Output and Inputs

Question Status: Previous Edition

- 92) Graphically, what happens to the production function if a firm uses automation to raise the amount of output per worker? Explain.

Answer: The production function is the relationship between inputs and maximum physical output. If automation raises the productivity of workers, then the production function will rotate upward so that higher output corresponds to a given level of labor input.

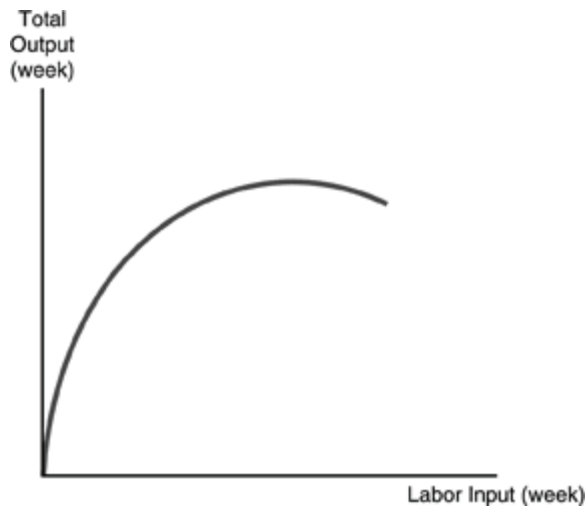
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Topic: 22.2 The Relationship Between Output and Inputs

AACSB: Analytic skills

Question Status: Previous Edition

22.3 Diminishing Marginal Product



- 1) Refer to the above figure. The curve reflects
- A) the law of diminishing marginal product in labor.
 - B) the law of increasing marginal product in labor.
 - C) the law of diminishing marginal product in capital.
 - D) the law of increasing marginal product in capital.

Answer: A

Diff: 1

Topic: 22.3 Diminishing Marginal Product

AACSB: Analytic skills

Question Status: Revised

- 2) Phil found that as he continued to crowd laborers into his hot dog stand, the extra output he was receiving from each additional laborer was beginning to fall off. This is an example of the
- A) law of increasing opportunities.
 - B) law of demand.
 - C) law of diminishing marginal utility.
 - D) law of diminishing product.

Answer: D

Diff: 2

Topic: 22.3 Diminishing Marginal Product

AACSB: Analytic skills

Question Status: Revised

- 3) The marginal productivity of labor will eventually decrease as more workers are employed because
- A) average product is increasing.
 - B) total product is decreasing.
 - C) the amount of capital will also be increasing.
 - D) on the average each worker will have fewer inputs to work with.

Answer: D

Diff: 2

Topic: 22.3 Diminishing Marginal Product

AACSB: Analytic skills

Question Status: Revised

- 4) If we add successive laborers to work a given amount of land on a wheat farm, eventually
- A) average total cost will fall to zero.
 - B) the increases in wheat harvested will rise at a constant rate.
 - C) the increases in wheat harvested will get smaller and smaller.
 - D) the increases in wheat harvested will get larger and larger.

Answer: C

Diff: 1

Topic: 22.3 Diminishing Marginal Product

AACSB: Analytic skills

Question Status: Revised

- 5) After some point successive equal increases in a variable factor of production, when added to a fixed amount of inputs, will result in smaller increases in output. This is known as
- A) the long run.
 - B) the law of diminishing marginal product.
 - C) marginal physical product.
 - D) short run average cost.

Answer: B

Diff: 1

Topic: 22.3 Diminishing Marginal Product

Question Status: Revised

- 6) The marginal product of labor may increase rapidly initially as more
- A) workers are able to specialize.
 - B) total product is decreasing.
 - C) the amount of other inputs is held constant.
 - D) workers will get crowded in a fixed factory.

Answer: A

Diff: 2

Topic: 22.3 Diminishing Marginal Product

AACSB: Analytic skills

Question Status: Revised

- 7) As successive equal increases in a variable factor of production are added to fixed factors of production, there will be a point beyond which the extra product that can be attributed to each additional unit of the variable factor of production will decline. This is known as the law of
- | | |
|----------------------------------|---------------------------------|
| A) diminishing total product. | B) diminishing average product. |
| C) diminishing marginal product. | D) decreasing product. |

Answer: C

Diff: 1

Topic: 22.3 Diminishing Marginal Product

Question Status: Revised

- 8) The law of diminishing marginal product indicates that
- A) average product will eventually decrease.
 - B) marginal product will eventually decrease.
 - C) total product will eventually decrease.
 - D) resources are inefficient.

Answer: B

Diff: 1

Topic: 22.3 Diminishing Marginal Product

Question Status: Revised

- 9) The observation that beyond some point, successive increases in a variable factor of production added to a fixed factor of production lead to smaller and smaller increases in output is
- A) the law of marginal utility.
 - B) the law of averages.
 - C) the law of diminishing marginal product.
 - D) the law of opportunity costs.

Answer: C

Diff: 1

Topic: 22.3 Diminishing Marginal Product

Question Status: Previous Edition

- 10) The law of diminishing marginal product states that
- A) output will continue to increase indefinitely if more variable factors of production are added to an existing stock of fixed factors.
 - B) successive equal-sized increases in labor, when added to fixed factors of production, will result in smaller increases of output.
 - C) a doubling all inputs will double output.
 - D) variable costs tend to decrease with output.

Answer: B

Diff: 1

Topic: 22.3 Diminishing Marginal Product

Question Status: Previous Edition

- 11) The law of diminishing marginal product is a statement
- A) that concerns changes in variable input and changes in output.
 - B) that concerns the long run.
 - C) that concerns changes in profits.
 - D) that relates to plant size.

Answer: A

Diff: 2

Topic: 22.3 Diminishing Marginal Product

Question Status: Previous Edition

- 12) The *point of saturation* occurs when a firm
- A) has total returns equal to zero.
 - B) first encounters negative marginal product.
 - C) first experiences positive marginal product.
 - D) maximizes its total returns.

Answer: B

Diff: 1

Topic: 22.3 Diminishing Marginal Product

AACSB: Analytic skills

Question Status: Previous Edition

- 13) What happens at a firm's *point of saturation*?
- A) For the first time, hiring an additional worker decreases total product.
 - B) Workers cannot take on any additional tasks without working overtime hours.
 - C) The market for a firm's output has been saturated and sales fall to zero.
 - D) The firm's total costs exceed its revenues.

Answer: A

Diff: 2

Topic: 22.3 Diminishing Marginal Product

AACSB: Analytic skills

Question Status: Previous Edition

Quantity of Labor	Total Product	Average Product	Marginal Product
1	22	22	22
2	52	26	30
3	81	27	29
4	100	25	19
5	115	23	15
6	126	21	11

- 14) Refer to the above table. At what quantity of labor does the law of diminishing marginal product set in?
- A) After 1 unit.
 - B) After 2 units.
 - C) After 3 units.
 - D) After 6 units.

Answer: B

Diff: 3

Topic: 22.3 Diminishing Marginal Product

AACSB: Analytic skills

Question Status: Revised

- 15) Refer to the above table. At what quantity of labor is the average product of labor maximized?
- A) 1 unit.
 - B) 2 units.
 - C) 3 units.
 - D) 6 units.

Answer: C

Diff: 3

Topic: 22.3 Diminishing Marginal Product

AACSB: Analytic skills

Question Status: Previous Edition

16) Refer to the above table. At what quantity of labor does it become obvious that the law of diminishing marginal product has set in?

- A) worker number 3
- B) worker number 4
- C) worker number 21
- D) worker number 5

Answer: A

Diff: 3

Topic: 22.3 Diminishing Marginal Product

AACSB: Analytic skills

Question Status: Previous Edition

17) As long as marginal product of labor exceeds the average product of labor, then average product of labor

- A) must fall.
- B) must rise.
- C) will stay unchanged.
- D) will be at its maximum value.

Answer: B

Diff: 3

Topic: 22.3 Diminishing Marginal Product

AACSB: Analytic skills

Question Status: Previous Edition

18) If marginal product is zero, we know that

- A) total product is also zero.
- B) average product is also zero.
- C) total output is maximized.
- D) average product is constant.

Answer: C

Diff: 2

Topic: 22.3 Diminishing Marginal Product

AACSB: Analytic skills

Question Status: Previous Edition

19) Total product will start to decrease

- A) at the quantity where the law of diminishing returns starts.
- B) when average physical product decreases.
- C) when marginal physical product increases.
- D) when marginal physical product becomes negative.

Answer: D

Diff: 1

Topic: 22.3 Diminishing Marginal Product

Question Status: Previous Edition

- 20) Suppose the total output curve increases at an increasing rate for workers 1–50, increases at a decreasing rate from workers 51–101, and decreases beyond 101 workers. We would know that
- A) marginal product is increasing from workers 1–50 and then becomes negative after worker 51.
 - B) marginal product is increasing from workers 1–50, decreasing after 51 workers, and becomes negative after the 101st worker.
 - C) marginal product is decreasing from workers 1–101, becoming negative at the 102nd worker.
 - D) marginal product is increasing from workers 1–50, constant from workers 51 to 101, and is decreasing after that.

Answer: B

Diff: 3

Topic: 22.3 Diminishing Marginal Product

Question Status: Previous Edition

Quantity of Workers	Total Product	Average Physical Product	Marginal Physical Product
0	0		
1	3		
2	7		
3	12		
4	16		
5	18		
6	18		

- 21) In the above table, the law of diminishing marginal product sets in after the _____ worker.
- A) first
 - B) sixth
 - C) third
 - D) fourth

Answer: C

Diff: 2

Topic: 22.3 Diminishing Marginal Product

Question Status: Previous Edition

- 22) The observation that after some point, successive equal size increases in a variable factor of production, such as labor, added to fixed factors of production, will result in smaller increases in output is the
- A) law of diminishing marginal product.
 - B) streamlining production function.
 - C) consumer equilibrium.
 - D) theory of increasing marginal utility.

Answer: A

Diff: 2

Topic: 22.3 Diminishing Marginal Product

Question Status: Previous Edition

- 23) When total product is decreasing, marginal product is
- A) positive and increasing.
 - B) positive and decreasing.
 - C) constant.
 - D) negative.

Answer: D

Diff: 2

Topic: 22.3 Diminishing Marginal Product

AACSB: Analytic skills

Question Status: Previous Edition

- 24) The law of diminishing marginal product shows the relationship
- A) between accounting and economic profits.
 - B) between short-run and long-run outputs of a firm.
 - C) between inputs and outputs for a firm in the short run.
 - D) between inputs and outputs for a firm in the long run.

Answer: C

Diff: 2

Topic: 22.3 Diminishing Marginal Product

Question Status: Previous Edition

- 25) Suppose the manager of a restaurant notices that when she has too many waiters on the floor for a shift that the waiters get in each other's way and fewer dinners are served. This is an example of
- A) diminishing marginal product.
 - B) diminishing marginal utility.
 - C) diminishing marginal workforce.
 - D) diminishing marginal inputs.

Answer: A

Diff: 2

Topic: 22.3 Diminishing Marginal Product

AACSB: Reflective thinking skills

Question Status: Previous Edition

- 26) What is the law of diminishing marginal product?

Answer: The law of diminishing marginal product states that, after some point, successive equal increases in a variable input added to fixed inputs will generate smaller and smaller increments in output. That is, after some point, the marginal physical product from adding a variable input to one or more fixed inputs will decrease.

Diff: 1

Topic: 22.3 Diminishing Marginal Product

Question Status: Previous Edition

- 27) Graphically, what does the marginal product curve for a labor input look like? Explain in words.

Answer: Typically, the marginal product of labor increases at low levels of labor inputs due to specialization and other factors. As labor inputs continue to increase, some workers may have fewer machines to work with and thus their marginal product decreases. In other words, the marginal product curve increases first and then decreases with successively increases in labor inputs.

Diff: 2

Topic: 22.3 Diminishing Marginal Product

AACSB: Analytic skills

Question Status: Previous Edition

- 28) What is the law of diminishing marginal product? Is it a realistic concept for describing the real world? Explain.

Answer: The law of diminishing marginal product is the observation that after some point, successive equal-sized increases in a variable input added to fixed inputs will result in smaller increases in output. This is a realistic concept because without diminishing marginal product, firms will continue to, say, hire additional workers without adding more machines or office space. This is not what we commonly see in the world.

Diff: 2

Topic: 22.3 Diminishing Marginal Product

AACSB: Analytic skills

Question Status: Previous Edition

- 29) "Diminishing marginal product is a basic law because new workers are always less qualified than the existing workers." Do you agree or disagree? Explain.

Answer: Disagree. Diminishing marginal product occurs not because workers are less qualified but because, given fixed some factors of production, each worker will have, on average, fewer of the fixed factors of production to utilize. Output per worker can be raised by increasing those fixed factors of production.

Diff: 2

Topic: 22.3 Diminishing Marginal Product

AACSB: Analytic skills

Question Status: Previous Edition

22.4 Short-Run Costs to the Firm

- 1) The firm's short-run costs contain

- A) only variable costs.
C) both variable and fixed costs.

- B) only fixed costs.
D) only opportunity costs.

Answer: C

Diff: 1

Topic: 22.4 Short-Run Costs to the Firm

Question Status: Previous Edition

- 2) Which of the following is correct?

- A) $TC = TFC + TVC$
C) $TC = TFC * TVC$

- B) $TC = TFC - TVC$
D) $TC = TFC / TVC$

Answer: A

Diff: 1

Topic: 22.4 Short-Run Costs to the Firm

AACSB: Analytic skills

Question Status: Previous Edition

- 3) Suppose that a firm is currently producing 1,000 units of output. At this level of output, AVC is \$1 per unit, and TFC is \$500. What is the firm's TC?

- A) \$1,500 B) \$1,000 C) \$501 D) \$499

Answer: A

Diff: 1

Topic: 22.4 Short-Run Costs to the Firm

AACSB: Analytic skills

Question Status: Previous Edition

- 4) Suppose that a firm is currently producing 500 units of output. At this level of output, $TVC = \$1,000$ and $TFC = \$2,500$. What is the firm's ATC ?

A) \$2 B) \$5 C) \$7 D) \$10

Answer: C

Diff: 1

Topic: 22.4 Short-Run Costs to the Firm

AACSB: Analytic skills

Question Status: Previous Edition

- 5) Suppose that when the level of output for the firm increases from 100 to 110 units, its variable costs increase from \$500 to \$700. What is the firm's marginal cost?

A) \$5 B) \$7 C) \$20 D) \$200

Answer: C

Diff: 1

Topic: 22.4 Short-Run Costs to the Firm

AACSB: Analytic skills

Question Status: Previous Edition

- 6) Which one of the following statements is FALSE?

A) $TC = TFC + TVC$ B) $ATC = AFC + AVC$
C) $AFC = TFC$ divided by Q D) $MC = TC$ divided by Q

Answer: D

Diff: 1

Topic: 22.4 Short-Run Costs to the Firm

AACSB: Analytic skills

Question Status: Previous Edition

- 7) Assume it takes 10 units of labor to produce 4 units of output. When the price of labor is \$6 per unit and fixed costs equal \$60, what is the total cost of those 4 units of output?

A) \$60 B) \$70 C) \$120 D) \$84

Answer: C

Diff: 2

Topic: 22.4 Short-Run Costs to the Firm

AACSB: Analytic skills

Question Status: Revised

- 8) Short-run total cost is defined as

A) the sum of marginal cost and total variable cost.
B) price of labor per unit multiplied by the number of labor units.
C) total fixed cost plus total variable cost.
D) total capital cost only.

Answer: C

Diff: 1

Topic: 22.4 Short-Run Costs to the Firm

Question Status: Revised

- 9) In economics, a fixed cost is a cost that
- A) is present only in the short run.
 - B) goes up as the level of output goes up.
 - C) goes down as the level of output goes up.
 - D) does not vary with the level of output.

Answer: D

Diff: 1

Topic: 22.4 Short-Run Costs to the Firm

Question Status: Previous Edition

- 10) Which of the following would NOT be considered a fixed cost of production?
- A) Wages paid to labor
 - B) The opportunity cost of capital
 - C) Interest payments on a loan
 - D) Insurance payments on plant and equipment

Answer: A

Diff: 1

Topic: 22.4 Short-Run Costs to the Firm

AACSB: Analytic skills

Question Status: Previous Edition

- 11) All of the following are most likely to be fixed costs EXCEPT the cost relating to
- A) insurance.
 - B) taxes.
 - C) rent.
 - D) packaging.

Answer: D

Diff: 2

Topic: 22.4 Short-Run Costs to the Firm

AACSB: Reflective thinking skills

Question Status: Revised

- 12) With a given plant size, an increase in output will NOT result in an increase in
- A) total cost.
 - B) average fixed cost.
 - C) total fixed cost.
 - D) average variable cost.

Answer: C

Diff: 1

Topic: 22.4 Short-Run Costs to the Firm

AACSB: Analytic skills

Question Status: Previous Edition

- 13) When output is 100 units, the firm's total fixed cost is \$500. What will this firm's total fixed cost be if output doubles to 200 units?
- A) \$1,000
 - B) \$500
 - C) \$250
 - D) Can't tell from the information provided

Answer: B

Diff: 2

Topic: 22.4 Short-Run Costs to the Firm

AACSB: Analytic skills

Question Status: Previous Edition

14) Which of the following statements about a firm's short-run variable costs is correct?

- A) They increase as the level of output decreases.
- B) They typically include the cost of workers' wages.
- C) They include the costs of plant and equipment.
- D) They are always a greater expense than are fixed costs.

Answer: B

Diff: 1

Topic: 22.4 Short-Run Costs to the Firm

AACSB: Analytic skills

Question Status: Previous Edition

15) As a firm increases the level of output that it produces, short-run average fixed cost

- A) rises and then falls.
- B) remains constant since fixed costs are constant.
- C) decreases.
- D) decreases up to a particular level of output and then increases.

Answer: C

Diff: 1

Topic: 22.4 Short-Run Costs to the Firm

AACSB: Analytic skills

Question Status: Previous Edition

16) Average fixed costs will

- A) rise as output rises.
- B) fall then rise as output rises.
- C) rise then fall as output rises.
- D) fall as output rises.

Answer: D

Diff: 1

Topic: 22.4 Short-Run Costs to the Firm

AACSB: Analytic skills

Question Status: Previous Edition

17) When Super Stuff Corporation produces 5,000 units, total costs equal \$150,000 and total variable costs equal \$75,000. At this level of output, what is Super Stuff's average fixed cost?

- A) \$75,000
- B) \$30
- C) \$225,000
- D) \$15

Answer: D

Diff: 3

Topic: 22.4 Short-Run Costs to the Firm

AACSB: Analytic skills

Question Status: Previous Edition

18) In the short run, average total cost is

- A) higher than average variable cost.
- B) equal to average variable cost.
- C) less than average variable cost.
- D) sometimes higher and sometimes lower than average variable cost.

Answer: A

Diff: 1

Topic: 22.4 Short-Run Costs to the Firm

AACSB: Analytic skills

Question Status: Previous Edition

Q	TFC	TVC	TC
0	\$90	\$ 0	\$ 90
1	90	25	115
2	90	32	122
3	90	42	132
4	90	64	154
5	90	95	185

- 19) Refer to the above table. At an output of 4 units, average variable costs are
 A) \$16. B) \$22. C) \$38.50. D) \$44.

Answer: A

Diff: 2

Topic: 22.4 Short-Run Costs to the Firm

AACSB: Analytic skills

Question Status: Revised

- 20) Refer to the above table. At an output of 3 units, average variable costs are
 A) \$42. B) \$30. C) \$44. D) \$14.

Answer: D

Diff: 2

Topic: 22.4 Short-Run Costs to the Firm

AACSB: Analytic skills

Question Status: New

- 21) Refer to the above table. At an output of 2 units, average total costs are
 A) \$61. B) \$122. C) \$16. D) \$45.

Answer: A

Diff: 2

Topic: 22.4 Short-Run Costs to the Firm

AACSB: Analytic skills

Question Status: New

- 22) Refer to the above table. At an output of 5 units, average total costs are
 A) \$18. B) \$19. C) \$37. D) \$185.

Answer: C

Diff: 2

Topic: 22.4 Short-Run Costs to the Firm

AACSB: Analytic skills

Question Status: New

- 23) Refer to the above table. When output rises from 2 units to 3 units, marginal costs are
 A) \$7. B) \$10. C) \$22. D) \$41.

Answer: B

Diff: 2

Topic: 22.4 Short-Run Costs to the Firm

AACSB: Analytic skills

Question Status: Previous Edition

- 24) Refer to the above table. When output rises from 3 units to 4 units, marginal costs are
A) \$16. B) \$10. C) \$22. D) \$31.

Answer: C

Diff: 2

Topic: 22.4 Short-Run Costs to the Firm

AACSB: Analytic skills

Question Status: New

- 25) Refer to the above table. When output rises from 4 units to 5 units, marginal costs are
A) \$19. B) \$10. C) \$22. D) \$31.

Answer: D

Diff: 2

Topic: 22.4 Short-Run Costs to the Firm

AACSB: Analytic skills

Question Status: New

- 26) Refer to the above table. When output rises from 2 units to 5 units, marginal costs are
A) \$26.50. B) \$31. C) \$21. D) \$63.

Answer: C

Diff: 3

Topic: 22.4 Short-Run Costs to the Firm

AACSB: Analytic skills

Question Status: New

- 27) Refer to the above table. What is AVC at an output of 2 units?
A) \$7 B) \$16 C) \$45 D) \$61

Answer: B

Diff: 2

Topic: 22.4 Short-Run Costs to the Firm

AACSB: Analytic skills

Question Status: Previous Edition

- 28) Refer to the above table. What is MC when output rises from 0 unit to 1 unit?
A) \$0 B) \$25 C) \$90 D) \$115

Answer: B

Diff: 2

Topic: 22.4 Short-Run Costs to the Firm

AACSB: Analytic skills

Question Status: Previous Edition

- 29) Refer to the above table. MC is the lowest
A) between 0 and 1 units of output. B) between 1 and 2 units of output.
C) between 3 and 4 units of output. D) at 0 units of output.

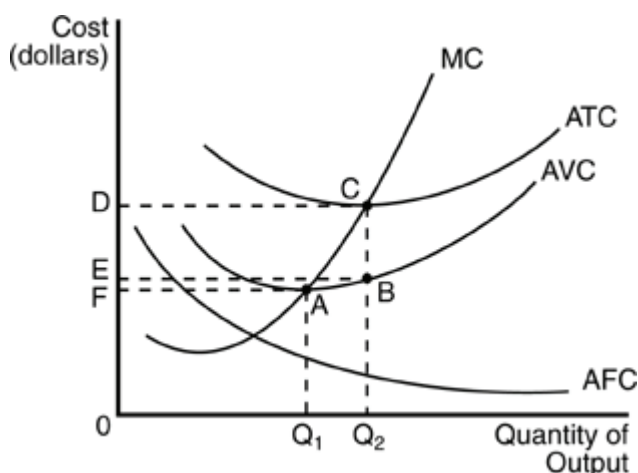
Answer: B

Diff: 2

Topic: 22.4 Short-Run Costs to the Firm

AACSB: Analytic skills

Question Status: Previous Edition



- 30) In the above figure, if this firm produces output level Q_2 , it has average variable costs of
- A) OF. B) OE. C) OC. D) OD.

Answer: B

Diff: 1

Topic: 22.4 Short-Run Costs to the Firm

AACSB: Analytic skills

Question Status: Previous Edition

- 31) In the above figure, if this firm produces output level Q_2 , it has average total costs of
- A) OF. B) OE. C) OC. D) OD.

Answer: D

Diff: 1

Topic: 22.4 Short-Run Costs to the Firm

AACSB: Analytic skills

Question Status: New

- 32) In the above figure, at an output level of Q_1 , total variable cost is
- A) OF times Q_1 . B) OD times Q_2 . C) OF. D) OF minus DF.

Answer: A

Diff: 1

Topic: 22.4 Short-Run Costs to the Firm

AACSB: Analytic skills

Question Status: Previous Edition

- 33) Which of the following statements is correct?
- A) $TC = TFC + TVC$
 B) $TC = \text{average product} + \text{marginal product}$
 C) $TC = TFC - TVC$
 D) $TC = \text{average physical product} - \text{marginal physical product}$

Answer: A

Diff: 1

Topic: 22.4 Short-Run Costs to the Firm

AACSB: Analytic skills

Question Status: Previous Edition

- 34) Costs that do not vary with output are
 A) total costs. B) variable costs. C) fixed costs. D) marginal costs.

Answer: C

Diff: 1

Topic: 22.4 Short-Run Costs to the Firm

Question Status: Previous Edition

- 35) Fixed costs are
 A) costs that never change.
 B) costs that a firm incurs even when output is zero.
 C) not actually costs since they do not affect the decisions of a firm.
 D) costs that increase at a constant rate when output increases.

Answer: B

Diff: 1

Topic: 22.4 Short-Run Costs to the Firm

Question Status: Previous Edition

- 36) Fixed costs include all but
 A) a normal rate of return on investment.
 B) temporary labor.
 C) property tax on the existing buildings.
 D) machines that have been producing output.

Answer: B

Diff: 1

Topic: 22.4 Short-Run Costs to the Firm

AACSB: Analytic skills

Question Status: Previous Edition

- 37) The total cost of the firm
 A) includes explicit costs but excludes implicit costs.
 B) includes implicit costs but excludes explicit costs.
 C) includes implicit and explicit costs.
 D) includes implicit and explicit costs but excludes a normal rate of return on investment.

Answer: C

Diff: 1

Topic: 22.4 Short-Run Costs to the Firm

Question Status: Previous Edition

- 38) Average variable costs equal
 A) total variable costs divided by marginal costs.
 B) total variable costs divided by output.
 C) the change in marginal costs from producing another unit of output.
 D) output divided by the change in total costs.

Answer: B

Diff: 1

Topic: 22.4 Short-Run Costs to the Firm

Question Status: Previous Edition

39) Average total cost equals

- A) TC/Q .
- C) TFC/Q .

- B) TVC/Q .
- D) change in total cost/change in output.

Answer: A

Diff: 1

Topic: 22.4 Short-Run Costs to the Firm

Question Status: Previous Edition

40) Average variable cost equals

- A) TC/Q .
- C) TFC/Q .

- B) TVC/Q .
- D) change in total cost/change in output.

Answer: B

Diff: 1

Topic: 22.4 Short-Run Costs to the Firm

Question Status: Previous Edition

41) Marginal cost equals

- A) TC/Q .
- C) TFC/Q .

- B) TVC/Q .
- D) change in total cost/change in output.

Answer: D

Diff: 1

Topic: 22.4 Short-Run Costs to the Firm

Question Status: Previous Edition

42) Marginal cost is equal to

- A) change in total cost divided by change in output.
- B) change in total variable cost divided by change in output.
- C) total variable cost divided by quantity of output.
- D) Both A and B are correct.

Answer: D

Diff: 1

Topic: 22.4 Short-Run Costs to the Firm

Question Status: Previous Edition

43) The change in total variable cost which accompanies one extra unit of output is

- A) the average total cost.
- B) the average variable cost.
- C) the average fixed cost.
- D) marginal cost.

Answer: D

Diff: 1

Topic: 22.4 Short-Run Costs to the Firm

Question Status: Previous Edition

44) The change in total costs due to a one-unit change in the production rate is

- A) total fixed cost.
- B) total variable cost.
- C) marginal cost.
- D) average total cost.

Answer: C

Diff: 1

Topic: 22.4 Short-Run Costs to the Firm

Question Status: Previous Edition

Q	TFC	TVC	TC	AFC	AVC	ATC
1						
2				\$75	\$25	
3					\$40	

45) Refer to the above table. What are total fixed costs at an output of 2 units?

- A) \$50 B) \$100 C) \$150 D) \$200

Answer: C

Diff: 3

Topic: 22.4 Short-Run Costs to the Firm

AACSB: Analytic skills

Question Status: Previous Edition

46) Refer to the above table. What are total variable costs at an output of 2 units?

- A) \$50 B) \$100 C) \$150 D) \$200

Answer: A

Diff: 3

Topic: 22.4 Short-Run Costs to the Firm

AACSB: Analytic skills

Question Status: Previous Edition

47) Refer to the above table. What are total costs at an output of 2 units?

- A) \$50 B) \$100 C) \$150 D) \$200

Answer: D

Diff: 3

Topic: 22.4 Short-Run Costs to the Firm

AACSB: Analytic skills

Question Status: Previous Edition

48) Refer to the above table. What are total fixed costs at an output of 3 units?

- A) \$90 B) \$120 C) \$150 D) \$270

Answer: C

Diff: 3

Topic: 22.4 Short-Run Costs to the Firm

AACSB: Analytic skills

Question Status: Previous Edition

49) Refer to the above table. What are total variable costs at an output of 3 units?

- A) \$90 B) \$120 C) \$150 D) \$270

Answer: B

Diff: 3

Topic: 22.4 Short-Run Costs to the Firm

AACSB: Analytic skills

Question Status: Previous Edition

50) Refer to the above table. What are total costs at an output of 3 units?

- A) \$90 B) \$120 C) \$150 D) \$270

Answer: D

Diff: 3

Topic: 22.4 Short-Run Costs to the Firm

AACSB: Analytic skills

Question Status: Previous Edition

51) If total costs are \$50,000 when 1000 units are produced, and total costs are \$50,100 when 1001 units are produced, we can conclude that

- A) average variable costs are \$100. B) average total costs are \$100.
C) average fixed costs are \$100. D) marginal costs are \$100.

Answer: D

Diff: 2

Topic: 22.4 Short-Run Costs to the Firm

AACSB: Analytic skills

Question Status: Previous Edition

52) If average variable costs are increasing while average total costs are decreasing, then

- A) marginal cost must lie between average variable and average total costs.
B) marginal cost must equal average variable cost.
C) marginal cost must equal average total cost.
D) fixed costs must be zero.

Answer: A

Diff: 3

Topic: 22.4 Short-Run Costs to the Firm

AACSB: Analytic skills

Question Status: Previous Edition

53) In a graph showing the short-run cost curves, the one curve which declines continuously as we expand output is called

- A) the average fixed cost curve. B) the average variable cost curve.
C) the average total cost curve. D) the marginal cost curve.

Answer: A

Diff: 3

Topic: 22.4 Short-Run Costs to the Firm

AACSB: Analytic skills

Question Status: Previous Edition

54) In a map showing short-run cost functions, one curve begins at the origin and rises as output expands. It is called the

- A) the marginal cost curve. B) the total fixed cost curve.
C) the total cost curve. D) the total variable cost curve.

Answer: D

Diff: 3

Topic: 22.4 Short-Run Costs to the Firm

AACSB: Analytic skills

Question Status: Previous Edition

- 55) If, in the short run, the level of output is zero, which of the following statement is true?
- A) total variable cost is zero but total cost equals total fixed cost, and both of the latter exceed zero
 - B) total cost and total fixed cost graphs will begin at the origin
 - C) total fixed cost will also be zero at first but will rise once output rises
 - D) none of the above

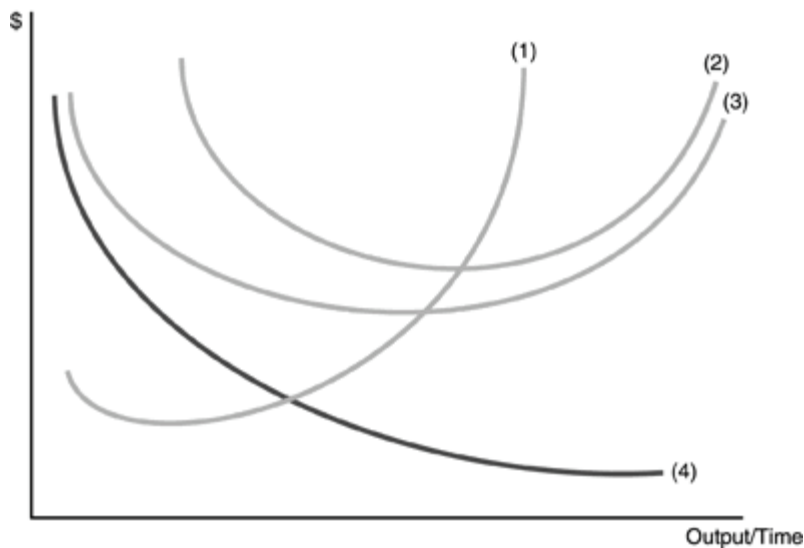
Answer: A

Diff: 3

Topic: 22.4 Short-Run Costs to the Firm

AACSB: Analytic skills

Question Status: Previous Edition



- 56) Refer to the above figure. Average total costs are represented by curve
- A) 1.
 - B) 2.
 - C) 3.
 - D) 4.

Answer: B

Diff: 2

Topic: 22.4 Short-Run Costs to the Firm

AACSB: Analytic skills

Question Status: Previous Edition

- 57) Refer to the above figure. Marginal costs are represented by curve
- A) 1.
 - B) 2.
 - C) 3.
 - D) 4.

Answer: A

Diff: 2

Topic: 22.4 Short-Run Costs to the Firm

AACSB: Analytic skills

Question Status: Previous Edition

- 58) Refer to the above figure. Average variable costs are represented by curve
 A) 1. B) 2. C) 3. D) 4.

Answer: C

Diff: 2

Topic: 22.4 Short-Run Costs to the Firm

AACSB: Analytic skills

Question Status: Previous Edition

- 59) Refer to the above figure. Curve (4) is the
 A) total fixed cost curve. B) marginal product curve.
 C) average fixed cost curve. D) average variable cost curve.

Answer: C

Diff: 2

Topic: 22.4 Short-Run Costs to the Firm

AACSB: Analytic skills

Question Status: Previous Edition

- 60) Suppose there are fixed costs and marginal costs that are constant. Then we know that
 A) average total costs are also constant.
 B) average variable costs decrease continuously as output increases, and lie above the marginal cost curve.
 C) average total costs decrease continuously as output increases, and lie above the average variable cost curve, which also is decreasing continuously.
 D) average total costs decrease continuously as output increases, and lie above the average variable cost curve, which is constant.

Answer: D

Diff: 3

Topic: 22.4 Short-Run Costs to the Firm

AACSB: Analytic skills

Question Status: Previous Edition

- 61) The marginal cost curve intersects
 A) the average fixed cost curve at its minimum.
 B) the average total cost curve at its maximum.
 C) the minimum of the average fixed cost, average variable cost and the average total cost curves.
 D) the minimum of the average variable cost and average total cost curves.

Answer: D

Diff: 1

Topic: 22.4 Short-Run Costs to the Firm

AACSB: Analytic skills

Question Status: Previous Edition

- 62) Which of the following would be an example of a fixed cost to a firm?
 A) rent for the building it occupies B) wages for the laborers
 C) the cost of raw materials D) electricity and other fuel costs

Answer: A

Diff: 2

Topic: 22.4 Short-Run Costs to the Firm

AACSB: Reflective thinking skills

Question Status: Previous Edition

- 63) Which equation is used by a manager when considering total cost?
- A) total costs (TC) = consumption (C) + investment (I) + government (G)
 - B) total costs (TC) = average fixed costs (AFC) + number of workers
 - C) total costs (TC) = average total costs (ATC)
 - D) total costs (TC) = total fixed costs (TFC) + total variable costs (TVC)

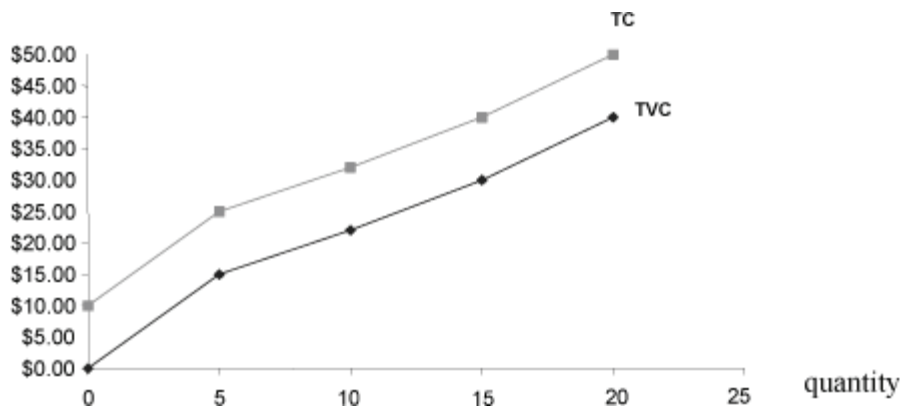
Answer: D

Diff: 1

Topic: 22.4 Short-Run Costs to the Firm

AACSB: Analytic skills

Question Status: Previous Edition



- 64) Use the above figure. The TFC at output level 10 is
- A) \$10.
 - B) \$3.
 - C) \$2.
 - D) \$1.

Answer: A

Diff: 2

Topic: 22.4 Short-Run Costs to the Firm

AACSB: Analytic skills

Question Status: Previous Edition

- 65) Use the above figure. The AFC at output level 20 is
- A) \$10.00.
 - B) \$0.50.
 - C) \$3.00.
 - D) \$1.00.

Answer: B

Diff: 2

Topic: 22.4 Short-Run Costs to the Firm

AACSB: Analytic skills

Question Status: Previous Edition

- 66) Use the above figure. The ATC at output 10 is
- A) \$30.00.
 - B) \$2.67.
 - C) \$2.00.
 - D) \$3.00.

Answer: D

Diff: 2

Topic: 22.4 Short-Run Costs to the Firm

AACSB: Analytic skills

Question Status: Previous Edition

67) Use the above figure. The AVC at output 10 is

- A) \$20.00. B) \$1.00. C) \$2.00. D) \$3.00.

Answer: C

Diff: 2

Topic: 22.4 Short-Run Costs to the Firm

AACSB: Analytic skills

Question Status: New

68) Use the above figure. The ATC at output 5 is

- A) \$25.00. B) \$2.00. C) \$3.00. D) \$5.00.

Answer: D

Diff: 2

Topic: 22.4 Short-Run Costs to the Firm

AACSB: Analytic skills

Question Status: New

69) Use the above figure. The AVC at output 5 is

- A) \$35.00. B) \$2.00. C) \$3.00. D) \$5.00.

Answer: C

Diff: 2

Topic: 22.4 Short-Run Costs to the Firm

AACSB: Analytic skills

Question Status: New

70) Notice the costs of production for a firm in the table below. What are the total costs for outputs of 7 units and 8 units respectively?

Total Output (Q/day)	Total Fixed Costs (TFC)	Total Variable Costs (TVC)
0	\$10	\$0
1	\$10	\$3.50
2	\$10	\$4.75
3	\$10	\$5.80
4	\$10	\$6.40
5	\$10	\$7.25
6	\$10	\$8.32
7	\$10	\$9.33
8	\$10	\$10.12

- A) \$20.12; \$19.33 B) \$17.25; \$18.32 C) \$19.33; \$20.12 D) \$9.33; \$10.12

Answer: C

Diff: 1

Topic: 22.4 Short-Run Costs to the Firm

AACSB: Analytic skills

Question Status: Previous Edition

71) Notice the costs as given in the table below. What is the marginal cost when total cost is \$23?

Total Output	Total Costs
0	\$10
1	\$15
2	\$18
3	\$20
4	\$21
5	\$23

- A) \$5 B) \$3 C) \$2 D) \$1

Answer: C

Diff: 1

Topic: 22.4 Short-Run Costs to the Firm

AACSB: Analytic skills

Question Status: Previous Edition

72) Notice the costs as given in the table below. What is the total fixed cost in the table below?

Total Output	Total Costs
0	\$10
1	\$15
2	\$18
3	\$20
4	\$21
5	\$23

- A) \$5 B) \$0 C) \$10 D) \$9

Answer: C

Diff: 1

Topic: 22.4 Short-Run Costs to the Firm

AACSB: Analytic skills

Question Status: Previous Edition

73) Marginal costs are defined as

- A) the change in total costs due to a one-unit change in production.
- B) costs that are viewed as marginal; of little or small importance.
- C) costs that represent a change, but one that cannot be measured correctly.
- D) the change in the decisions that are made by households and firms.

Answer: A

Diff: 1

Topic: 22.4 Short-Run Costs to the Firm

Question Status: Previous Edition

74) In the short run, total costs equal

- A) the sum of total fixed costs and total variable costs.
- B) the sum of total fixed costs and total explicit costs.
- C) the sum of total variable costs and total implicit costs.
- D) the sum of total fixed costs and total implicit costs.

Answer: A

Diff: 1

Topic: 22.4 Short-Run Costs to the Firm

Question Status: Previous Edition

75) Summing all of the costs that do not change as output varies yields

- A) variable costs.
- B) fixed costs.
- C) implicit costs.
- D) explicit costs.

Answer: B

Diff: 1

Topic: 22.4 Short-Run Costs to the Firm

Question Status: Previous Edition

76) As long as output increases,

- A) average total costs decrease.
- B) average variable costs decrease.
- C) average fixed costs decrease.
- D) marginal costs decrease.

Answer: C

Diff: 2

Topic: 22.4 Short-Run Costs to the Firm

AACSB: Analytic skills

Question Status: Previous Edition

77) Which of the following is correct?

- A) $AFC = TC/Q - TVC/Q$
- B) $AVC = TVC - AFC$
- C) $TC = AVC * Q$
- D) $MC = TC - TVC$

Answer: A

Diff: 1

Topic: 22.4 Short-Run Costs to the Firm

AACSB: Analytic skills

Question Status: Previous Edition

Total Output	Total Costs
0	\$10
1	18
2	21
3	23
4	24
5	26
6	29
7	33
8	38
9	44
10	51

78) Using the above table, we see that when output is 4 units, average total cost equals

- A) \$24.00. B) \$14.00. C) \$3.50. D) \$6.00.

Answer: D

Diff: 2

Topic: 22.4 Short-Run Costs to the Firm

AACSB: Analytic skills

Question Status: Previous Edition

79) Using the above table, we see that when output is 4 units, average variable cost equals

- A) \$24.00. B) \$14.00. C) \$3.50. D) \$6.00.

Answer: C

Diff: 2

Topic: 22.4 Short-Run Costs to the Firm

AACSB: Analytic skills

Question Status: New

80) In the above table, total fixed costs are

- A) \$10.00. B) \$5.00. C) \$8.00. D) \$18.00.

Answer: A

Diff: 2

Topic: 22.4 Short-Run Costs to the Firm

AACSB: Analytic skills

Question Status: Previous Edition

81) In the above table, when output is 8 units, average variable costs are

- A) \$4.75. B) \$3.50. C) \$1.25. D) \$4.50.

Answer: B

Diff: 3

Topic: 22.4 Short-Run Costs to the Firm

AACSB: Analytic skills

Question Status: Previous Edition

82) In the above table, when output is 8 units, average total costs are

- A) \$4.75. B) \$3.50. C) \$38. D) \$28.

Answer: A

Diff: 3

Topic: 22.4 Short-Run Costs to the Firm

AACSB: Analytic skills

Question Status: New

83) In the above table, the marginal cost of the ninth unit is

- A) \$4.00. B) \$5.00. C) \$6.00. D) \$7.00.

Answer: C

Diff: 2

Topic: 22.4 Short-Run Costs to the Firm

AACSB: Analytic skills

Question Status: Previous Edition

84) In the above table, the marginal cost of the fourth unit is

- A) \$1.00. B) \$2.00. C) \$6.00. D) \$24.00.

Answer: A

Diff: 2

Topic: 22.4 Short-Run Costs to the Firm

AACSB: Analytic skills

Question Status: New

85) In the above table, the marginal cost of the seventh unit is

- A) \$4.00. B) \$5.00. C) \$3.00. D) \$33.00.

Answer: A

Diff: 2

Topic: 22.4 Short-Run Costs to the Firm

AACSB: Analytic skills

Question Status: New

86) Marginal cost is equal to average variable cost

- A) when average variable cost is at its minimum value.
B) when marginal cost is at its minimum value.
C) when average variable cost is getting smaller.
D) when average variable cost is getting larger.

Answer: A

Diff: 2

Topic: 22.4 Short-Run Costs to the Firm

AACSB: Analytic skills

Question Status: Previous Edition

87) The ratio of total costs to the quantity produced is referred to as

- A) average fixed costs. B) average variable costs.
C) marginal costs. D) average total costs.

Answer: D

Diff: 1

Topic: 22.4 Short-Run Costs to the Firm

Question Status: Previous Edition

88) As a firm continues to produce additional output, which of the following will continue to decline as output expands?

- A) average total costs
- B) marginal costs
- C) average fixed costs
- D) opportunity costs

Answer: C

Diff: 2

Topic: 22.4 Short-Run Costs to the Firm

AACSB: Analytic skills

Question Status: Previous Edition

89) The addition to total costs associated with the production of one more unit of output is referred to as

- A) average cost.
- B) marginal cost.
- C) opportunity cost.
- D) overhead cost.

Answer: B

Diff: 2

Topic: 22.4 Short-Run Costs to the Firm

Question Status: Previous Edition

90) The marginal cost curve always intersects the average total cost curve at the point at which the average total cost curve

- A) is zero.
- B) is at its minimum.
- C) is at its maximum.
- D) has a vertical slope.

Answer: B

Diff: 3

Topic: 22.4 Short-Run Costs to the Firm

AACSB: Analytic skills

Question Status: Previous Edition

91) Which of the following is NOT correct?

- A) $MC = \text{change in } TC / \text{change in } Q$
- B) $ATC = TC / Q$
- C) $AVC = TVC / Q$
- D) $ATC + AVC = AFC$

Answer: D

Diff: 2

Topic: 22.4 Short-Run Costs to the Firm

AACSB: Analytic skills

Question Status: Previous Edition

92) Total fixed cost is

- A) the cost of buying and installing new machinery.
- B) the cost that does not change as output changes.
- C) the expenditure on imported raw materials.
- D) the wages paid to consultants.

Answer: B

Diff: 1

Topic: 22.4 Short-Run Costs to the Firm

Question Status: Previous Edition

93) Which of the following would be an example of a fixed cost?

- A) the electric and gas bills
- B) wages paid to temporary workers
- C) property insurance premiums
- D) expenditures on imported raw materials

Answer: C

Diff: 1

Topic: 22.4 Short-Run Costs to the Firm

AACSB: Reflective thinking skills

Question Status: Previous Edition

94) The average fixed cost curve

- A) is parallel to the x-axis.
- B) is the distance between the TC and TVC curves.
- C) slopes downward as output increases.
- D) increases as the cost of inputs rise.

Answer: C

Diff: 1

Topic: 22.4 Short-Run Costs to the Firm

AACSB: Analytic skills

Question Status: Previous Edition

Q (output)	TFC	TVC	TC	AFC	AVC	ATC	MC
0	\$0	-		-		-	-
1					\$10		
2	\$5				\$15		
3					\$15		
4					\$16.75		

95) Using the above table, the AFC, the AVC, and the ATC when output is 1 unit are

- A) \$10, \$10, and \$20, respectively.
- B) \$5, \$10, and \$15, respectively.
- C) \$0, \$10, and \$10, respectively.
- D) \$5, \$10, and \$5, respectively.

Answer: B

Diff: 3

Topic: 22.4 Short-Run Costs to the Firm

AACSB: Analytic skills

Question Status: Revised

96) Using the above table, the TC, the AFC, and the TVC when output is 2 units are

- A) \$20, \$2.50, and \$15, respectively.
- B) \$35, \$2.50, and \$30, respectively.
- C) \$30, \$2.50, and \$40, respectively.
- D) \$35, \$2.50, and \$20, respectively.

Answer: B

Diff: 3

Topic: 22.4 Short-Run Costs to the Firm

AACSB: Analytic skills

Question Status: Revised

97) Using the above table, the TVC, the TC, and MC when output is 3 units are

- A) \$45, \$50, and \$15, respectively.
- B) \$15, \$20, and \$15, respectively.
- C) \$45, \$18, and \$15, respectively.
- D) \$15, \$45, and \$15, respectively.

Answer: A

Diff: 2

Topic: 22.4 Short-Run Costs to the Firm

AACSB: Analytic skills

Question Status: Revised

98) Using the above table, the TVC, the TC, and the MC when output is 4 units are

- A) \$67, \$72, and \$22, respectively.
- B) \$16.75, \$21.75, and \$22, respectively.
- C) \$16.75, \$21.75, and \$30, respectively.
- D) \$67, \$62, and \$22, respectively.

Answer: A

Diff: 3

Topic: 22.4 Short-Run Costs to the Firm

AACSB: Analytic skills

Question Status: Revised

99) The distance between the TC and the TVC curve

- A) is constant.
- B) decreases as output increases.
- C) increases as output increases.
- D) is the MC curve.

Answer: A

Diff: 2

Topic: 22.4 Short-Run Costs to the Firm

AACSB: Analytic skills

Question Status: Previous Edition

100) $MC = AVC$ and $MC = ATC$ at points at which

- A) the AVC and ATC curves are at their respective maximums.
- B) the AVC and ATC curves are at their respective minimums.
- C) the distance between the ATC and AVC curves is at its minimum.
- D) the distance between the ATC and AVC curves is at its maximum.

Answer: B

Diff: 3

Topic: 22.4 Short-Run Costs to the Firm

AACSB: Analytic skills

Question Status: Previous Edition

101) At an output at which MC is greater than ATC

- A) the ATC curve is downward sloping.
- B) the ATC curve is upward sloping.
- C) the AFC curve is upward sloping.
- D) the AVC curve is downward sloping.

Answer: B

Diff: 3

Topic: 22.4 Short-Run Costs to the Firm

AACSB: Analytic skills

Question Status: Previous Edition

- 102) At an output at which ATC is greater than MC,
 A) the ATC curve is downward sloping. B) the ATC curve is upward sloping.
 C) the AFC curve is upward sloping. D) the AVC curve is upward sloping.

Answer: A

Diff: 2

Topic: 22.4 Short-Run Costs to the Firm

AACSB: Analytic skills

Question Status: Previous Edition

- 103) A firm has average fixed costs of \$0.20 and average variable costs of \$2.50 at an output of 500 units. The firm's total costs are therefore
 A) \$1,250. B) \$1,350. C) \$1,150. D) \$1,500.

Answer: B

Diff: 2

Topic: 22.4 Short-Run Costs to the Firm

AACSB: Analytic skills

Question Status: Previous Edition

Output	Fixed Costs	Variable Costs	Total Costs	Average Total Costs	Average Variable Costs	Marginal Costs
0		\$0	\$100			
1		30				
2		50				
3		60				
4		120				
5		200				

- 104) In the above table, what are the total fixed costs for an output of 4?
 A) \$0 B) \$120 C) \$100 D) \$220

Answer: C

Diff: 3

Topic: 22.4 Short-Run Costs to the Firm

AACSB: Analytic skills

Question Status: Previous Edition

- 105) In the above table, what is the marginal cost to produce the 5th unit of output?
 A) \$80 B) \$60 C) \$55 D) \$20

Answer: A

Diff: 2

Topic: 22.4 Short-Run Costs to the Firm

AACSB: Analytic skills

Question Status: Previous Edition

- 106) In the above table, what is the marginal cost to produce the 4th unit of output?
 A) \$30 B) \$60 C) \$55 D) \$20

Answer: B

Diff: 2

Topic: 22.4 Short-Run Costs to the Firm

AACSB: Analytic skills

Question Status: Previous Edition

- 107) In the above table, what is the marginal cost to produce the 2nd unit of output?
 A) \$30 B) \$60 C) \$55 D) \$20

Answer: D

Diff: 2

Topic: 22.4 Short-Run Costs to the Firm

AACSB: Analytic skills

Question Status: Previous Edition

- 108) In the above table, what is the average variable cost to produce 4 units of output?
 A) \$30 B) \$60 C) \$55 D) \$20

Answer: A

Diff: 2

Topic: 22.4 Short-Run Costs to the Firm

AACSB: Analytic skills

Question Status: Previous Edition

- 109) In the above table, what is the average variable cost to produce 3 units of output?
 A) \$30 B) \$60 C) \$10 D) \$20

Answer: D

Diff: 2

Topic: 22.4 Short-Run Costs to the Firm

AACSB: Analytic skills

Question Status: New

- 110) In the above table, what is the average variable cost to produce 2 units of output?
 A) \$30 B) \$60 C) \$55 D) \$20

Answer: A

Diff: 2

Topic: 22.4 Short-Run Costs to the Firm

AACSB: Analytic skills

Question Status: New

- 111) In the above table, what is the average total cost to produce 4 units of output?
 A) \$30 B) \$60 C) \$55 D) \$20

Answer: C

Diff: 2

Topic: 22.4 Short-Run Costs to the Firm

AACSB: Analytic skills

Question Status: Previous Edition

- 112) In the above table, what is the average total cost to produce 5 units of output?
 A) \$80 B) \$55 C) \$40 D) \$60

Answer: D

Diff: 2

Topic: 22.4 Short-Run Costs to the Firm

AACSB: Analytic skills

Question Status: New

- 113) In the above table, what is the average total cost to produce 3 units of output?
A) \$33.33 B) \$53.33 C) \$55 D) \$20

Answer: B

Diff: 2

Topic: 22.4 Short-Run Costs to the Firm

AACSB: Analytic skills

Question Status: New

- 114) Which of the following statements regarding the relationship between average and marginal costs is INCORRECT?

- A) There is always a definite relationship between average and marginal cost.
- B) When marginal costs are less than average costs, the latter must fall.
- C) When marginal costs are greater than average costs, the latter must rise.
- D) There is no way for average variable costs to fall when marginal costs are falling.

Answer: D

Diff: 3

Topic: 22.4 Short-Run Costs to the Firm

AACSB: Analytic skills

Question Status: Previous Edition

- 115) Assume that in the short run a firm is producing 100 units of output, has average total costs of \$100, and average variable costs of \$50. The firm's *total fixed* costs are
A) \$50. B) \$5,000. C) \$150. D) \$15,000.

Answer: B

Diff: 2

Topic: 22.4 Short-Run Costs to the Firm

AACSB: Analytic skills

Question Status: Previous Edition

- 116) Assume that in the short run a firm is producing 100 units of output, has average total costs of \$100, and average fixed costs of \$20. The firm's *total variable* cost at this output level is
A) \$120. B) \$80. C) \$8,000. D) \$12,000.

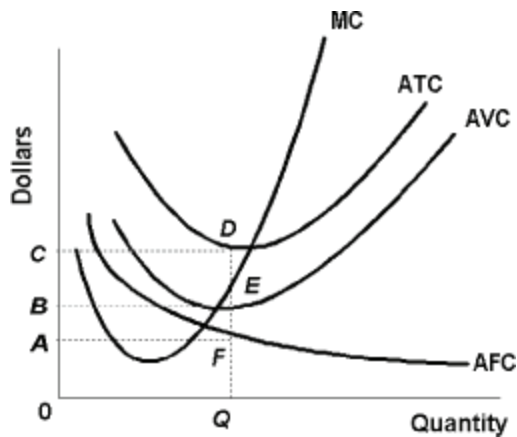
Answer: C

Diff: 2

Topic: 22.4 Short-Run Costs to the Firm

AACSB: Analytic skills

Question Status: Previous Edition



- 117) Use the above figure. At an output equal to "Q" the total cost for the firm will be the area
 A) OQDC. B) OQFA. C) OQBC. D) OQEB.

Answer: A

Diff: 3

Topic: 22.4 Short-Run Costs to the Firm

AACSB: Analytic skills

Question Status: Revised

- 118) Use the above figure. At an output equal to "Q" the average fixed cost for the firm will be the line segment
 A) DE. B) AB. C) BE. D) CD.

Answer: A

Diff: 3

Topic: 22.4 Short-Run Costs to the Firm

AACSB: Analytic skills

Question Status: Previous Edition

- 119) Use the above figure. At an output equal to "Q" the total variable cost for the firm will be the area
 A) OQAB. B) OQEB. C) OQFA. D) OQDC.

Answer: B

Diff: 3

Topic: 22.4 Short-Run Costs to the Firm

AACSB: Analytic skills

Question Status: Revised

120) In the table below, what are the marginal costs of the fourth unit of output?

Total Output	Total Variable Cost
0	\$0
1	\$10,000
2	\$20,000
3	\$30,000
4	\$40,000

A) \$10,000

B) \$20,000

C) \$30,000

D) \$40,000

Answer: A

Diff: 2

Topic: 22.4 Short-Run Costs to the Firm

AACSB: Analytic skills

Question Status: Previous Edition

121) Which of the following is true?

A) The MC curve intersects AFC at its minimum point.

B) If MC is below AVC, AVC must be increasing.

C) If MC is above ATC, ATC must be increasing.

D) None of the above.

Answer: C

Diff: 2

Topic: 22.4 Short-Run Costs to the Firm

AACSB: Analytic skills

Question Status: Revised

122) If average total cost is decreasing as more and more units are produced, then marginal cost must be

A) rising.

B) constant.

C) below average total cost.

D) negative.

Answer: C

Diff: 1

Topic: 22.4 Short-Run Costs to the Firm

AACSB: Analytic skills

Question Status: Revised

123) What is the difference between average variable costs and average total costs?

Answer: Average total costs equal average variable costs plus average fixed costs. Total fixed costs are constant and do not vary with output, so average fixed costs fall as output increases.

For this reason, as output increases average variable and average total costs get closer together.

Diff: 2

Topic: 22.4 Short-Run Costs to the Firm

AACSB: Analytic skills

Question Status: Previous Edition

124) What are the relationships between the marginal cost curve and the average cost curves?

Explain in words.

Answer: When the marginal cost curve is below each of the average variable cost and average total cost curves, the latter fall. The marginal cost curve intersects the two average cost curves at the minimum points of those average cost curves. When the marginal cost curve is above the average cost curves, the latter rise.

Diff: 2

Topic: 22.4 Short-Run Costs to the Firm

AACSB: Analytic skills

Question Status: Previous Edition

125) "All average costs have a U-shaped curve." Do you agree or disagree? Explain why?

Answer: Disagree. It is true that the average variable cost curve and average total cost curve are U-shaped, but the average fixed cost curve is continuously downward sloping. Because fixed costs do not vary, an increase in output only reduces average fixed costs.

Diff: 2

Topic: 22.4 Short-Run Costs to the Firm

AACSB: Analytic skills

Question Status: Previous Edition

22.5 The Relationship Between Diminishing Marginal Product and Cost Curves

1) Marginal cost begins to rise when

A) diminishing marginal product begins.

B) diminishing marginal product ends.

C) average total cost falls.

D) fixed cost falls.

Answer: A

Diff: 2

Topic: 22.5 The Relationship Between Diminishing Marginal Product and Cost Curves

AACSB: Analytic skills

Question Status: Previous Edition

2) At the output rate at which diminishing marginal product begins, a firm will experience

A) constant average total costs.

B) increasing average fixed costs.

C) increasing marginal costs.

D) decreasing average variable costs.

Answer: C

Diff: 1

Topic: 22.5 The Relationship Between Diminishing Marginal Product and Cost Curves

AACSB: Analytic skills

Question Status: Previous Edition

3) Which of the following statements is correct?

A) Average variable costs always exceed average total costs.

B) Average fixed costs are constant.

C) Average variable cost reaches its minimum when average product equals its maximum.

D) Average fixed costs are always less than average variable costs.

Answer: C

Diff: 2

Topic: 22.5 The Relationship Between Diminishing Marginal Product and Cost Curves

AACSB: Analytic skills

Question Status: Previous Edition

4) If the marginal product of an input is falling, then

- A) average fixed cost is constant.
- B) marginal cost is falling.
- C) average total cost is constant.
- D) marginal cost is rising.

Answer: D

Diff: 2

Topic: 22.5 The Relationship Between Diminishing Marginal Product and Cost Curves

AACSB: Analytic skills

Question Status: Revised

5) When marginal product is rising,

- A) total product is falling.
- B) marginal cost is falling.
- C) marginal cost is rising.
- D) average fixed cost is rising.

Answer: B

Diff: 2

Topic: 22.5 The Relationship Between Diminishing Marginal Product and Cost Curves

AACSB: Analytic skills

Question Status: Previous Edition

6) The shape of the short-run average total cost curve is a result of

- A) economies of scale.
- B) diseconomies of scale.
- C) the law of diminishing marginal product.
- D) falling profits.

Answer: C

Diff: 2

Topic: 22.5 The Relationship Between Diminishing Marginal Product and Cost Curves

AACSB: Analytic skills

Question Status: Previous Edition

7) As a firm's production increases in the short run, the average total cost curve eventually slopes upward because

- A) marginal physical product eventually declines as output increases.
- B) marginal cost eventually declines as output increases.
- C) average fixed cost declines with increases in output.
- D) average physical product rises with increases in output.

Answer: A

Diff: 1

Topic: 22.5 The Relationship Between Diminishing Marginal Product and Cost Curves

AACSB: Analytic skills

Question Status: Previous Edition

8) The law of diminishing marginal product is NOT responsible for the shape of

- A) the total cost curve.
- B) the average variable cost curve.
- C) total fixed cost curve.
- D) marginal cost curve.

Answer: C

Diff: 2

Topic: 22.5 The Relationship Between Diminishing Marginal Product and Cost Curves

AACSB: Analytic skills

Question Status: Previous Edition

- 9) When the marginal physical product is rising,
 A) total cost is falling. B) average total cost is increasing.
 C) marginal cost is falling. D) marginal cost is rising.

Answer: C

Diff: 1

Topic: 22.5 The Relationship Between Diminishing Marginal Product and Cost Curves

AACSB: Analytic skills

Question Status: Previous Edition

- 10) When the marginal physical product is falling,
 A) marginal cost is rising. B) average fixed costs are rising.
 C) total costs are falling. D) average variable costs are falling.

Answer: A

Diff: 1

Topic: 22.5 The Relationship Between Diminishing Marginal Product and Cost Curves

AACSB: Analytic skills

Question Status: Previous Edition

- 11) When the average physical product is rising,
 A) total cost is falling. B) average total cost is increasing.
 C) average variable cost is falling. D) marginal cost is always rising.

Answer: C

Diff: 1

Topic: 22.5 The Relationship Between Diminishing Marginal Product and Cost Curves

AACSB: Analytic skills

Question Status: New

- 12) When the average physical product is falling,
 A) average variable costs are rising. B) average fixed costs are rising.
 C) total costs are falling. D) average variable costs are falling.

Answer: A

Diff: 1

Topic: 22.5 The Relationship Between Diminishing Marginal Product and Cost Curves

AACSB: Analytic skills

Question Status: New

- 13) Marginal costs will begin to rise at the point where
 A) fixed costs increase. B) variable costs increase.
 C) average variable costs increase. D) diminishing marginal product begins.

Answer: D

Diff: 1

Topic: 22.5 The Relationship Between Diminishing Marginal Product and Cost Curves

AACSB: Analytic skills

Question Status: Previous Edition

Quantity of Labor	Total Product	Average Product	Marginal Product
1	22	22	22
2	52	26	30
3	81	27	29
4	100	25	19
5	115	23	15
6	126	21	11

- 14) Refer to the above table. At what quantity of labor does the marginal cost curve start to increase?

A) After 1 unit B) After 2 units C) After 3 units D) After 6 units

Answer: B

Diff: 3

Topic: 22.5 The Relationship Between Diminishing Marginal Product and Cost Curves

AACSB: Analytic skills

Question Status: Previous Edition

- 15) Refer to the above table. At what quantity of labor does the average variable cost curve start to increase?

A) After 1 unit B) After 2 units C) After 3 units D) After 6 units

Answer: C

Diff: 3

Topic: 22.5 The Relationship Between Diminishing Marginal Product and Cost Curves

AACSB: Analytic skills

Question Status: Previous Edition

- 16) Marginal physical product of labor equals

A) the wage. B) the wage divided by marginal cost.
C) marginal cost divided by the wage. D) marginal cost times the wage.

Answer: B

Diff: 2

Topic: 22.5 The Relationship Between Diminishing Marginal Product and Cost Curves

AACSB: Analytic skills

Question Status: Previous Edition

- 17) Short-run cost relationships for a firm are

A) determined by the law of diminishing marginal product.
B) determined by the specific long-run relationships that exist.
C) due to the level of wages relative to other input prices.
D) due to the normal contractual relations in a market.

Answer: A

Diff: 2

Topic: 22.5 The Relationship Between Diminishing Marginal Product and Cost Curves

AACSB: Analytic skills

Question Status: Previous Edition

- 18) If the marginal product curve is intersecting the average product curve, we know that
- A) the average variable cost curve is intersecting the average total cost curve.
 - B) the marginal cost curve is intersecting the average fixed cost curve.
 - C) the average total cost curve lies above the marginal cost curve.
 - D) the marginal cost curve is intersecting the average total cost curve.

Answer: D

Diff: 3

Topic: 22.5 The Relationship Between Diminishing Marginal Product and Cost Curves

AACSB: Analytic skills

Question Status: Previous Edition

- 19) When marginal costs are rising,
- A) marginal physical product is also rising.
 - B) marginal physical product is falling.
 - C) average physical product is rising.
 - D) average physical product is falling.

Answer: B

Diff: 2

Topic: 22.5 The Relationship Between Diminishing Marginal Product and Cost Curves

AACSB: Analytic skills

Question Status: Previous Edition

- 20) When average variable costs are rising,
- A) marginal physical product is also rising.
 - B) marginal costs is falling.
 - C) average physical product is rising.
 - D) average physical product is falling.

Answer: D

Diff: 2

Topic: 22.5 The Relationship Between Diminishing Marginal Product and Cost Curves

AACSB: Analytic skills

Question Status: New

- 21) What happens to the marginal cost curve when the marginal physical product of labor is rising?
- A) It becomes upward sloping.
 - B) It becomes vertical.
 - C) It becomes downward sloping.
 - D) It becomes horizontal.

Answer: C

Diff: 2

Topic: 22.5 The Relationship Between Diminishing Marginal Product and Cost Curves

AACSB: Analytic skills

Question Status: Previous Edition

- 22) The typical cost curves are U-shaped due to the
- A) law of diminishing marginal utility.
 - B) law of supply.
 - C) law of demand.
 - D) law of diminishing marginal product.

Answer: D

Diff: 2

Topic: 22.5 The Relationship Between Diminishing Marginal Product and Cost Curves

Question Status: Previous Edition

- 23) If the price of labor is constant and a firm experiences diminishing marginal product, then its
- A) marginal costs increase.
 - B) marginal costs decrease.
 - C) fixed costs increase.
 - D) total costs decrease.

Answer: A

Diff: 2

Topic: 22.5 The Relationship Between Diminishing Marginal Product and Cost Curves

AACSB: Analytic skills

Question Status: Previous Edition

- 24) If the price of labor is constant and a firm experiences diminishing marginal product, then its
- A) marginal costs decrease.
 - B) fixed costs increase.
 - C) average variable cost increases.
 - D) total costs decrease.

Answer: C

Diff: 2

Topic: 22.5 The Relationship Between Diminishing Marginal Product and Cost Curves

AACSB: Analytic skills

Question Status: New

- 25) What is the relationship between the marginal cost curve and marginal product? Explain.

Answer: The short-run cost curve is a reflection of the law of diminishing marginal product.

Graphically, the marginal cost curve looks like the inverse of marginal physical product of a variable input. As long as marginal product rises, marginal costs decline. At the point at which marginal product begins to decline, marginal costs begin to rise.

Diff: 1

Topic: 22.5 The Relationship Between Diminishing Marginal Product and Cost Curves

AACSB: Analytic skills

Question Status: Previous Edition

- 26) What is the most important determinant of the firm's short-run cost curves?

Answer: The short-run cost curves owe their shapes to the law of diminishing marginal product.

Given a constant price of a variable input, marginal costs will rise as marginal product diminishes. Similarly, given the relationship that exists between marginal cost and average total and average variable costs, we can also say the law of diminishing marginal product determines their shapes.

Diff: 3

Topic: 22.5 The Relationship Between Diminishing Marginal Product and Cost Curves

AACSB: Analytic skills

Question Status: Previous Edition

- 27) What is the relationship between marginal cost and marginal physical product?

Answer: Assuming labor is the only variable input and the wage rate is fixed, marginal cost then equals the wage rate divided by marginal physical product. Thus, marginal cost increases as marginal physical product decreases, and vice versa.

Diff: 2

Topic: 22.5 The Relationship Between Diminishing Marginal Product and Cost Curves

AACSB: Analytic skills

Question Status: Previous Edition

22.6 Long-Run Cost Curves

- 1) In economics, the planning horizon is defined as
- A) 10 years for every firm.
 - B) the longest time period over which the firm can make decisions.
 - C) the period of time for which technology is fixed.
 - D) the long run, during which all inputs are variable.

Answer: D

Diff: 1

Topic: 22.6 Long-Run Cost Curves

Question Status: Previous Edition

- 2) The minimum possible short-run average costs are equal to long-run average costs when
- A) the plant is producing at its short-run minimum point.
 - B) short-run and long-run costs are declining.
 - C) the long-run curve is at a minimum point.
 - D) production is at any point on the LAC curve.

Answer: C

Diff: 1

Topic: 22.6 Long-Run Cost Curves

AACSB: Analytic skills

Question Status: Previous Edition

- 3) The long-run average cost curve
- A) is always a downward sloping straight line.
 - B) is a curve which is tangent to each member of a set of short-run average cost curves.
 - C) is identical to the marginal cost curve.
 - D) should always be horizontal.

Answer: B

Diff: 1

Topic: 22.6 Long-Run Cost Curves

AACSB: Analytic skills

Question Status: Previous Edition

- 4) A firm's long-run average cost curve is
- A) the locus of points representing the minimum unit cost of producing any given rate of output when all inputs may be adjusted.
 - B) the locus of points made up of the minimum point on each short-run average total cost curve when only one input may be adjusted.
 - C) the envelope of the firm's variable cost curves.
 - D) identical to the lowest short-run average cost curve the firm has.

Answer: A

Diff: 2

Topic: 22.6 Long-Run Cost Curves

AACSB: Analytic skills

Question Status: Previous Edition

- 5) The long run is
- A) over one year.
 - B) over five years.
 - C) when all factors of production are fixed.
 - D) the time period in which all factors of production can be varied.

Answer: D

Diff: 1

Topic: 22.6 Long-Run Cost Curves

Question Status: Revised

- 6) Which of the following is TRUE for a firm in the long run?
- A) Variable costs will initially increase and then decrease.
 - B) The law of diminishing marginal product holds.
 - C) All costs are variable costs.
 - D) Variable costs will equal marginal cost at all output levels.

Answer: C

Diff: 1

Topic: 22.6 Long-Run Cost Curves

AACSB: Analytic skills

Question Status: Previous Edition

- 7) The planning horizon is the
- A) long run.
 - B) short run.
 - C) point where production begins.
 - D) point where diminishing marginal product starts.

Answer: A

Diff: 1

Topic: 22.6 Long-Run Cost Curves

Question Status: Previous Edition

- 8) Which of the following statements is true about the planning horizon?
- A) All inputs are fixed.
 - B) All inputs are variable.
 - C) There are fixed and variable inputs.
 - D) Costs do not exist.

Answer: B

Diff: 1

Topic: 22.6 Long-Run Cost Curves

AACSB: Analytic skills

Question Status: Previous Edition

- 9) Every point on the long-run average cost curve is
- A) also a minimum point on a short-run average cost curve.
 - B) on a short-run average total cost curve.
 - C) on a short-run average variable cost curve.
 - D) on a short-run marginal cost curve.

Answer: B

Diff: 2

Topic: 22.6 Long-Run Cost Curves

AACSB: Analytic skills

Question Status: Previous Edition

10) The locus of points representing the minimum unit cost of producing any given rate of output is the

- A) short-run average total cost curve.
- B) long-run marginal cost curve.
- C) short-run total cost curve.
- D) long-run average cost curve.

Answer: D

Diff: 2

Topic: 22.6 Long-Run Cost Curves

AACSB: Analytic skills

Question Status: Previous Edition

11) The long run for a business is a period of time

- A) longer than a year.
- B) when most inputs are variable.
- C) when all inputs can change.
- D) when labor is the only input used by the business.

Answer: C

Diff: 1

Topic: 22.6 Long-Run Cost Curves

Question Status: Previous Edition

12) The long run is defined as a time period during which full adjustment can be made to any change in the economic environment. Thus in the long run, all factors of production are variable. Long-run curves are sometimes called planning curves, and the long run is sometimes called the

- A) foreseeable future.
- B) minimum efficient time period.
- C) non-adjustment period.
- D) planning horizon.

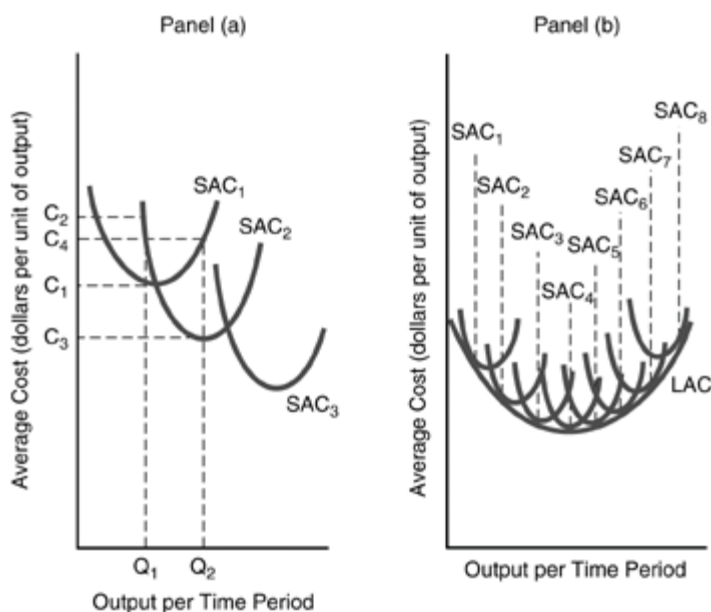
Answer: D

Diff: 1

Topic: 22.6 Long-Run Cost Curves

Question Status: Previous Edition

13) Which of the following statements with respect to the figure below is INCORRECT?



- A) All the possible short-run average cost curves that correspond to the different plant sizes are shown as SAC₁–SAC₈.
- B) If the anticipated permanent rate of output per unit time period is Q₁ in panel (a), the optimal plant would correspond to SAC₁.
- C) If the permanent rate of output increases to Q₂ in panel (a), it will be more profitable to have a plant size corresponding to SAC₃.
- D) The long-run average cost curve LAC in panel (b) is sometimes called the planning curve representing the locus (path) of points.

Answer: C

Diff: 2

Topic: 22.6 Long-Run Cost Curves

AACSB: Analytic skills

Question Status: Previous Edition

14) The planning curve is the

- A) long-run average cost curve.
- B) production function.
- C) short-run marginal cost curve.
- D) short-run average cost curve.

Answer: A

Diff: 1

Topic: 22.6 Long-Run Cost Curves

Question Status: Previous Edition

15) Explain how the long-run average cost curve is constructed graphically.

Answer: The long-run average cost curve is constructed as the envelope to (a curve tangent to) all the possible short-run average cost curves that correspond to different plant sizes.

Diff: 1

Topic: 22.6 Long-Run Cost Curves

AACSB: Analytic skills

Question Status: Previous Edition

16) How is the long-run average cost curve found? What is its importance to the firm?

Answer: The long-run average cost curve is the locus of points representing the minimum unit cost of producing any given rate of output, given the current technology and resource prices. It is the envelope of the various short-run average cost curves. It is significant in that it is the planning curve for the firm in deciding whether to expand its production facilities or not.

Diff: 2

Topic: 22.6 Long-Run Cost Curves

AACSB: Analytic skills

Question Status: Previous Edition

17) "The long-run average cost curve is derived from adding all short-run average cost curves together." Do you agree or disagree? Explain.

Answer: Disagree. The long-run average cost curve is derived as the curve that is tangent to the short-run average cost curves rather than adding them together. The reason for the tangent points is that the firm will try to change any of its inputs whenever they lead to a lower average cost.

Diff: 2

Topic: 22.6 Long-Run Cost Curves

AACSB: Analytic skills

Question Status: Previous Edition

22.7 Why the Long-Run Average Cost Curve Is U-Shaped

1) Which of the following is NOT one of the reasons a firm might be expected to experience economies of scale?

A) specialization

B) the dimensional factor

C) improved productive equipment

D) depreciation

Answer: D

Diff: 2

Topic: 22.7 Why the Long-Run Average Cost Curve Is U-Shaped

Question Status: Revised

2) Due to extremely large fixed costs, an electricity generating plant probably experiences which of the following returns to size?

A) diseconomies of scale

B) diminishing marginal product

C) constant returns to scale

D) economies of scale

Answer: D

Diff: 2

Topic: 22.7 Why the Long-Run Average Cost Curve Is U-Shaped

AACSB: Reflective thinking skills

Question Status: Revised

- 3) If a firm gets so large that management of employees and other resources becomes a costly problem, it will be experiencing

A) diseconomies of scale. B) diminishing marginal product.
C) constant returns to scale. D) economies of scale.

Answer: A

Diff: 2

Topic: 22.7 Why the Long-Run Average Cost Curve Is U-Shaped

AACSB: Analytic skills

Question Status: Revised

- 4) Suppose a firm doubles its output in the long run. At the same time the unit cost of production remains unchanged. We can conclude that the firm is

A) exploiting the economies of scale available to it.
B) facing constant returns to scale.
C) facing diseconomies of scale.
D) not using the available technology efficiently.

Answer: B

Diff: 1

Topic: 22.7 Why the Long-Run Average Cost Curve Is U-Shaped

AACSB: Analytic skills

Question Status: Revised



- 5) In the above figure, the long-run cost curve between points A and B illustrates
- A) diseconomies of scale. B) diminishing marginal product.
C) constant returns to scale. D) economies of scale.

Answer: D

Diff: 1

Topic: 22.7 Why the Long-Run Average Cost Curve Is U-Shaped

AACSB: Analytic skills

Question Status: Revised

- 6) In the above figure, the long-run cost curve between points C and D illustrates
- A) diseconomies of scale.
 - B) diminishing marginal product.
 - C) constant returns to scale.
 - D) economies of scale.

Answer: C

Diff: 1

Topic: 22.7 Why the Long-Run Average Cost Curve Is U-Shaped

AACSB: Analytic skills

Question Status: Revised

- 7) In the above figure, the long-run cost curve between points E and F illustrates
- A) diseconomies of scale.
 - B) diminishing marginal product.
 - C) constant returns to scale.
 - D) economies of scale.

Answer: A

Diff: 1

Topic: 22.7 Why the Long-Run Average Cost Curve Is U-Shaped

AACSB: Analytic skills

Question Status: Revised

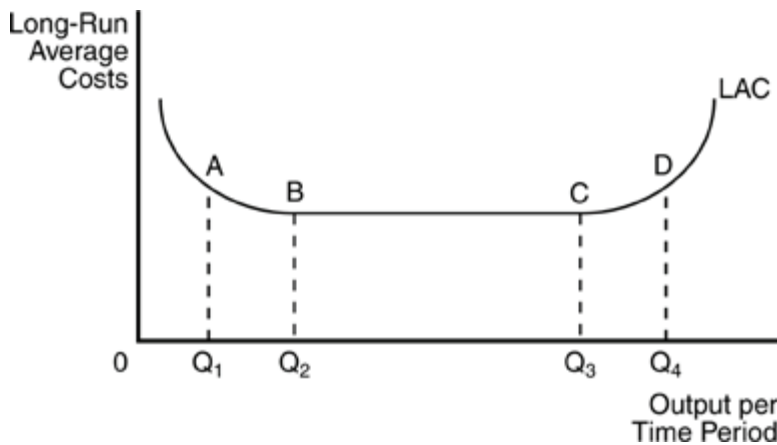
- 8) Economies of scale occur when there are
- A) decreases in long-run average costs resulting from increases in output.
 - B) no changes in long-run average costs when output increases.
 - C) increases in long-run average costs when output increases.
 - D) decreases in output resulting from decreases in input.

Answer: A

Diff: 1

Topic: 22.7 Why the Long-Run Average Cost Curve Is U-Shaped

Question Status: Revised



- 9) In the above figure, for any output level less than Q_2 , this firm experiences
- A) economies of scale.
 - B) diseconomies of scale.
 - C) constant economies of scale.
 - D) decreasing long run average costs.

Answer: A

Diff: 1

Topic: 22.7 Why the Long-Run Average Cost Curve Is U-Shaped

AACSB: Analytic skills

Question Status: Previous Edition

- 10) In the above figure, the firm experiences constant returns to scale between output levels of
- A) zero and Q_1 .
 - B) Q_2 and Q_3 .
 - C) Q_3 and Q_4 .
 - D) any level greater than Q_4 .

Answer: B

Diff: 1

Topic: 22.7 Why the Long-Run Average Cost Curve Is U-Shaped

AACSB: Analytic skills

Question Status: Previous Edition

- 11) Economies of scale exist where the long-run average cost curve is
- A) horizontal.
 - B) downward sloping.
 - C) upward sloping.
 - D) tangent to the marginal cost curve.

Answer: B

Diff: 1

Topic: 22.7 Why the Long-Run Average Cost Curve Is U-Shaped

Question Status: Previous Edition

- 12) The typical shape of the long-run average cost curve is like
- A) the letter "C."
 - B) the letter "U."
 - C) an inverse of the letter "V."
 - D) a circle.

Answer: B

Diff: 1

Topic: 22.7 Why the Long-Run Average Cost Curve Is U-Shaped

AACSB: Analytic skills

Question Status: Previous Edition

- 13) Diseconomies of scale occur
- A) only in the short run.
 - B) only in the long run.
 - C) because of fixed costs.
 - D) none of the above.

Answer: B

Diff: 2

Topic: 22.7 Why the Long-Run Average Cost Curve Is U-Shaped

AACSB: Analytic skills

Question Status: Previous Edition

- 14) A horizontal long-run average cost curve indicates
- A) constant returns to scale.
 - B) diseconomies of scale.
 - C) constant marginal physical product.
 - D) economies of scale.

Answer: A

Diff: 1

Topic: 22.7 Why the Long-Run Average Cost Curve Is U-Shaped

AACSB: Analytic skills

Question Status: Previous Edition

- 15) When increasing its output results in falling costs, a firm that can adjust all inputs is experiencing
- A) diseconomies of scale.
 - B) economies of scale.
 - C) loss.
 - D) capital gains.

Answer: B

Diff: 1

Topic: 22.7 Why the Long-Run Average Cost Curve Is U-Shaped

Question Status: Previous Edition

- 16) Which of the following is NOT a reason a firm might experience economies of scale?
- A) Specialization
 - B) Dimensional factors
 - C) Increasing long-run average costs
 - D) More productive equipment

Answer: C

Diff: 1

Topic: 22.7 Why the Long-Run Average Cost Curve Is U-Shaped

Question Status: Previous Edition

- 17) Which of the following physical relationships might generate economies of scale?
- A) Proportionally larger pipes can transport more than a proportional increase in oil.
 - B) Larger equipment tends to weigh more and use more fuel on a per-unit-of-output basis.
 - C) Each lift truck requires one lift truck driver.
 - D) A doubling of all inputs leads to a doubling of output.

Answer: A

Diff: 2

Topic: 22.7 Why the Long-Run Average Cost Curve Is U-Shaped

AACSB: Analytic skills

Question Status: Previous Edition

- 18) If a firm is experiencing diseconomies of scale, then
- A) proportional increases in all inputs result in proportional increases in output.
 - B) the long-run average cost curve is rising as output expands.
 - C) the long-run average cost curve is decreasing as output expands.
 - D) the firm should expand the size of its operation.

Answer: B

Diff: 1

Topic: 22.7 Why the Long-Run Average Cost Curve Is U-Shaped

Question Status: Previous Edition

- 19) The law of diminishing marginal product is responsible for
- A) economies of scale.
 - B) constant returns to scale.
 - C) diseconomies of scale.
 - D) none of the long-run relationships.

Answer: D

Diff: 1

Topic: 22.7 Why the Long-Run Average Cost Curve Is U-Shaped

AACSB: Analytic skills

Question Status: Previous Edition

- 20) The law of diminishing marginal product
- A) holds in the short run and the long run because as you increase the amount of variable inputs eventually the increases in output will decrease.
 - B) does not hold in the short run because of fixed costs.
 - C) does not hold in the long run because there are no fixed inputs in the long run.
 - D) holds in the short and long run because of economies to scale.

Answer: C

Diff: 1

Topic: 22.7 Why the Long-Run Average Cost Curve Is U-Shaped

AACSB: Analytic skills

Question Status: Previous Edition

- 21) A decrease in long-run average costs resulting from increases in output is
- A) attributed to economies of scale.
 - B) attributed to diseconomies to scale.
 - C) attributed to constant returns to scale.
 - D) attributed to the law of diminishing marginal product.

Answer: A

Diff: 1

Topic: 22.7 Why the Long-Run Average Cost Curve Is U-Shaped

Question Status: Revised

- 22) An increase in long-run average costs resulting from decreases in output is
- A) attributed to the law of diminishing marginal product.
 - B) attributed to constant returns to scale.
 - C) attributed to economies of scale.
 - D) attributed to diseconomies to scale.

Answer: C

Diff: 1

Topic: 22.7 Why the Long-Run Average Cost Curve Is U-Shaped

Question Status: New

- 23) An increase in long-run average costs resulting from increases in output is
- A) attributed to economies of scale.
 - B) attributed to diseconomies to scale.
 - C) attributed to constant returns to scale.
 - D) attributed to the law of diminishing marginal product.

Answer: B

Diff: 1

Topic: 22.7 Why the Long-Run Average Cost Curve Is U-Shaped

Question Status: New

- 24) A decrease in long-run average costs resulting from decreases in output is
- A) attributed to constant returns to scale.
 - B) attributed to economies of scale.
 - C) attributed to the law of diminishing marginal product.
 - D) attributed to diseconomies to scale.

Answer: D

Diff: 1

Topic: 22.7 Why the Long-Run Average Cost Curve Is U-Shaped

Question Status: New

- 25) An increase in output would result in no change in long-run average costs when there are
- A) economies of scale.
 - B) diseconomies to scale.
 - C) constant returns to scale.
 - D) diminishing marginal product.

Answer: C

Diff: 1

Topic: 22.7 Why the Long-Run Average Cost Curve Is U-Shaped

Question Status: Revised

- 26) An increase in output would result in a rise in long-run average costs when there are
- A) economies of scale.
 - B) diseconomies to scale.
 - C) constant returns to scale.
 - D) the law of diminishing marginal product.

Answer: B

Diff: 1

Topic: 22.7 Why the Long-Run Average Cost Curve Is U-Shaped

Question Status: Revised

- 27) Constant returns to scale are illustrated by
- A) a downward sloping long-run average cost curve.
 - B) a horizontal long-run average cost curve.
 - C) an upward sloping long-run average cost curve.
 - D) a long-run average cost curve that is shaped like an upside down U.

Answer: B

Diff: 1

Topic: 22.7 Why the Long-Run Average Cost Curve Is U-Shaped

Question Status: Previous Edition

- 28) Economies to scale are illustrated by
- A) a downward sloping long-run average cost curve.
 - B) a horizontal long-run average cost curve.
 - C) an upward sloping long-run average cost curve.
 - D) a long-run average cost curve that is shaped like an upside down U.

Answer: A

Diff: 1

Topic: 22.7 Why the Long-Run Average Cost Curve Is U-Shaped

Question Status: Previous Edition

- 29) Diseconomies to scale are illustrated by
- A) a downward sloping long-run average cost curve.
 - B) a horizontal long-run average cost curve.
 - C) an upward sloping long-run average cost curve.
 - D) a long-run average cost curve that is shaped like an upside down U.

Answer: C

Diff: 1

Topic: 22.7 Why the Long-Run Average Cost Curve Is U-Shaped

Question Status: Previous Edition

- 30) Increases in long-run average cost that result from output increases is
- A) the law of diminishing marginal product.
 - B) economies of scale.
 - C) constant returns to scale.
 - D) diseconomies of scale.

Answer: D

Diff: 1

Topic: 22.7 Why the Long-Run Average Cost Curve Is U-Shaped

Question Status: Previous Edition

- 31) Which of the following is NOT a reason why a firm may experience economies of scale?
- A) Productive specialization
 - B) Dimensional factors
 - C) Improved productive equipment
 - D) Increased levels of management

Answer: D

Diff: 2

Topic: 22.7 Why the Long-Run Average Cost Curve Is U-Shaped

Question Status: Previous Edition

- 32) The main source of diseconomies of scale is
- A) dimensional factors associated with many physical relationships.
 - B) specialization of labor.
 - C) limits to the efficient functioning of management.
 - D) constant returns to scale.

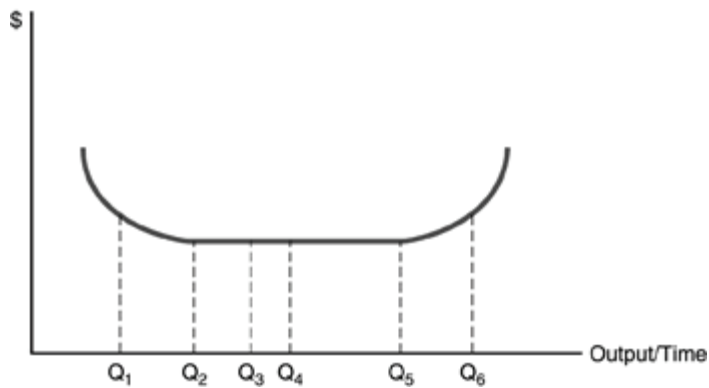
Answer: C

Diff: 2

Topic: 22.7 Why the Long-Run Average Cost Curve Is U-Shaped

AACSB: Analytic skills

Question Status: Previous Edition



- 33) Refer to the above figure. Economies of scale exist
- A) over the entire range of output.
 - B) from output Q₂ to Q₅.
 - C) up to output Q₂.
 - D) after output Q₅.

Answer: C

Diff: 2

Topic: 22.7 Why the Long-Run Average Cost Curve Is U-Shaped

AACSB: Analytic skills

Question Status: Previous Edition

- 34) Refer to the above figure. Diseconomies of scale exist
- A) over the entire range of output.
 - B) from output Q₂ to Q₅.
 - C) up to output Q₂.
 - D) after output Q₅.

Answer: D

Diff: 2

Topic: 22.7 Why the Long-Run Average Cost Curve Is U-Shaped

AACSB: Analytic skills

Question Status: Previous Edition

- 35) Refer to the above figure. Constant returns to scale exist
- A) up to output Q₂.
 - B) from Q₂ to Q₅.
 - C) after Q₅.
 - D) over the entire long-run average cost curve.

Answer: B

Diff: 2

Topic: 22.7 Why the Long-Run Average Cost Curve Is U-Shaped

AACSB: Analytic skills

Question Status: Previous Edition

- 36) A decrease in the long-run average costs resulting from increasing output is referred to as
- A) diseconomies of scale.
 - B) constant return to scale.
 - C) a scale invariant process.
 - D) economies of scale.

Answer: D

Diff: 1

Topic: 22.7 Why the Long-Run Average Cost Curve Is U-Shaped

Question Status: Previous Edition

- 37) When long-run average costs decline as output increases, the firm is experiencing
- A) negative returns to scale.
 - B) diseconomies of scale.
 - C) constant returns to scale.
 - D) economies of scale.

Answer: D

Diff: 1

Topic: 22.7 Why the Long-Run Average Cost Curve Is U-Shaped

Question Status: Previous Edition

- 38) When long-run average costs rise as output increases, the firm is experiencing
- A) diseconomies of scale.
 - B) diminishing returns.
 - C) constant returns to scale.
 - D) economies of scale.

Answer: A

Diff: 1

Topic: 22.7 Why the Long-Run Average Cost Curve Is U-Shaped

Question Status: Previous Edition

- 39) All of the following are reasons for economies of scale EXCEPT
- A) diminishing marginal product.
 - B) specialization.
 - C) dimensional factors.
 - D) improved production equipment.

Answer: A

Diff: 2

Topic: 22.7 Why the Long-Run Average Cost Curve Is U-Shaped

Question Status: Previous Edition

- 40) Which of the following statements is true?
- A) If a firm is experiencing economies of scale, diminishing marginal product has not set in yet.
 - B) No firm would ever operate at a level of output for which it experiences diseconomies of scale.
 - C) A firm can experience diminishing marginal product and economies of scale at the same time.
 - D) Diseconomies of scale is a short-run concept, while economies of scale is a long-run concept.

Answer: C

Diff: 3

Topic: 22.7 Why the Long-Run Average Cost Curve Is U-Shaped

AACSB: Analytic skills

Question Status: Previous Edition

- 41) What factors generate economies of scale?

Answer: Economies of scale can be generated by specialization. As a firm's scale of operations increases, there are more opportunities for specialization of labor, and this usually is very productive. Further, there are certain physical relationships that generate economies of scale, such as that between the volume of a cylinder and the diameter of the cylinder. Finally, large-scale enterprise can take advantage of larger volume types of machinery which lower per-unit costs.

Diff: 2

Topic: 22.7 Why the Long-Run Average Cost Curve Is U-Shaped

AACSB: Analytic skills

Question Status: Previous Edition

- 42) "The short-run average total cost curve and the long-run average cost curve are both U-shaped for the same reasons." Do you agree or disagree? Why?

Answer: Disagree. The U-shaped short-run average cost curves are due to the law of diminishing marginal product, but in the long run there are no fixed inputs so the law of diminishing marginal product does not apply. The long-run average cost curve is U-shaped if economies of scale apply at smaller rates of output and diseconomies of scale apply at larger rates of output.

Diff: 2

Topic: 22.7 Why the Long-Run Average Cost Curve Is U-Shaped

AACSB: Analytic skills

Question Status: Previous Edition

- 43) "A firm cannot experience both economies of scale and diminishing marginal product." Do you agree or disagree? Why?

Answer: Disagree. Diminishing marginal product is a short-run concept while economies of scale is a long-run concept. The former occurs when one input is fixed and the other when all inputs are variable. So, there is no reason why a firm cannot experience both.

Diff: 3

Topic: 22.7 Why the Long-Run Average Cost Curve Is U-Shaped

AACSB: Analytic skills

Question Status: Previous Edition

- 44) Why might firms experience diseconomies of scale?

Answer: The main reason for firms to experience diseconomies of scale is that there are limits to the efficient functioning of management. As a firm gets bigger, the layers of supervision grow, the costs of information and communication also grow more than proportionally so that the average cost increase.

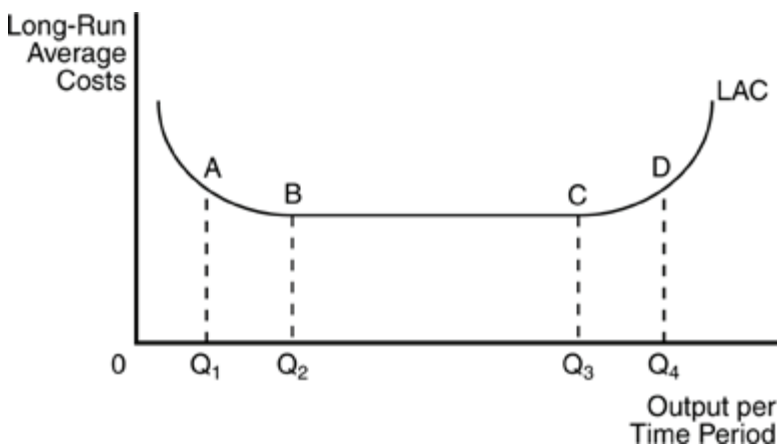
Diff: 2

Topic: 22.7 Why the Long-Run Average Cost Curve Is U-Shaped

AACSB: Analytic skills

Question Status: Previous Edition

22.8 Minimum Efficient Scale



- 1) In the above figure, point B is called
- A) the maximum efficient scale.
 - B) the minimum efficient scale.
 - C) the planning horizon.
 - D) the point of diminishing marginal product.

Answer: B

Diff: 1

Topic: 22.8 Minimum Efficient Scale

AACSB: Analytic skills

Question Status: Revised

- 2) A single-plant firm trying to select the rate of output consistent with an overall plant size that yields the minimum efficient scale will choose a rate of output for which
- A) the short-run marginal cost curve crosses the short-run average total cost curve at that rate of output.
 - B) the long-run marginal cost curve crosses the long-run average fixed cost curve at that rate of output.
 - C) long-run average total cost is lowest at that rate of output.
 - D) total fixed costs are minimized at that rate of output.

Answer: C

Diff: 2

Topic: 22.8 Minimum Efficient Scale

Question Status: Revised

- 3) When a firm is at its minimum efficient scale of operation, it produces the
- A) maximum rate of output at which long-run average cost is minimized.
 - B) minimum rate of output at which long-run average cost is minimized.
 - C) maximum rate of output consistent with lowest long-run marginal cost.
 - D) minimum rate of output consistent with lowest long-run marginal cost.

Answer: B

Diff: 1

Topic: 22.8 Minimum Efficient Scale

Question Status: Previous Edition

4) Minimum efficient scale is defined as

- A) the lowest output level at which long-run average costs are at their minimum.
- B) the amount of labor that maximizes the marginal product of labor.
- C) the point at which marginal cost, average variable cost, and average fixed cost are all equal.
- D) the point at which economies of scale are at their maximum.

Answer: A

Diff: 1

Topic: 22.8 Minimum Efficient Scale

Question Status: Previous Edition

5) If the long-run average cost curve continuously slopes upward as output rises, minimum efficient scale would be

- A) zero.
- B) at the midpoint of the long-run average cost curve.
- C) at the rate of output associated with the smallest sized plant the firm can build.
- D) nonexistent.

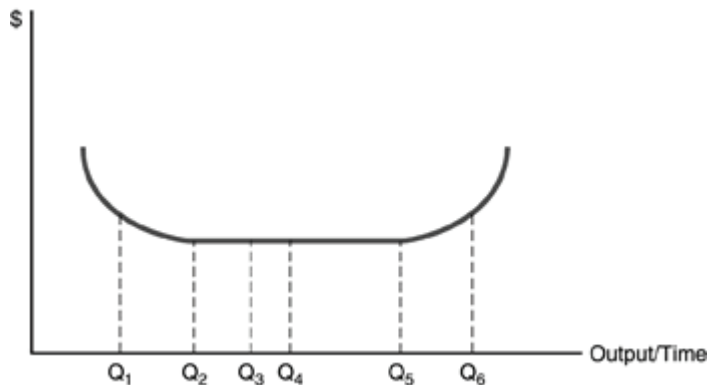
Answer: D

Diff: 2

Topic: 22.8 Minimum Efficient Scale

AACSB: Analytic skills

Question Status: Previous Edition



6) Refer to the above figure. Minimum efficient scale is at output rate

- A) Q₁.
- B) Q₂.
- C) Q₃.
- D) Q₅.

Answer: B

Diff: 2

Topic: 22.8 Minimum Efficient Scale

AACSB: Analytic skills

Question Status: Previous Edition

7) Minimum efficient scale

- A) is the point at which economies of scale begin for a particular firm.
- B) is the lowest rate of output per unit of time at which long-run average costs reach a minimum for a particular firm.
- C) applies only to firms with U-shaped long-run average cost curves.
- D) is the point at which diseconomies of scale begin for a particular firm.

Answer: B

Diff: 1

Topic: 22.8 Minimum Efficient Scale

Question Status: Previous Edition

8) The lowest rate of output per unit of time at which long-run average costs for a particular firm are at a minimum is

- A) economies of scale.
- B) diseconomies of scale.
- C) constant returns of scale.
- D) minimum efficient scale.

Answer: D

Diff: 1

Topic: 22.8 Minimum Efficient Scale

Question Status: Previous Edition

9) When the minimum efficient scale occurs at a high level of industry output

- A) the firms in the industry will be producing in the diseconomies of scale portion of the curve.
- B) there will only be a few firms in the industry.
- C) the government will have to take over the production of the good since it will be unprofitable for firms.
- D) there will be a lot of firms in this industry.

Answer: B

Diff: 1

Topic: 22.8 Minimum Efficient Scale

AACSB: Analytic skills

Question Status: Previous Edition

10) The lowest rate of output per unit of time at which long-run average costs for a firm are at a minimum defines

- A) maximum efficient scale.
- B) minimum efficient scale.
- C) allowable efficient scale.
- D) short-run efficient scale.

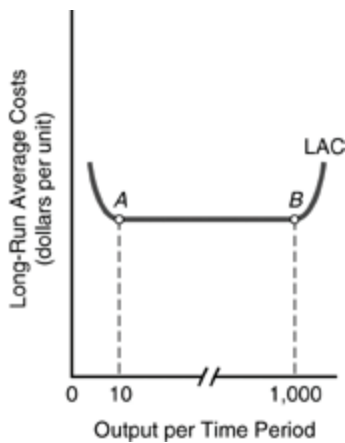
Answer: B

Diff: 2

Topic: 22.8 Minimum Efficient Scale

Question Status: Previous Edition

11) The minimum efficient scale in the figure below shows that



- A) point A is the minimum efficient scale (MES) for the firm.
- B) point B is the minimum efficient scale (MES) for the firm.
- C) the long-run average cost curve (LAC) reaches a minimum point at B.
- D) the minimum efficient scale (MES) illustrates maximum average costs.

Answer: A

Diff: 2

Topic: 22.8 Minimum Efficient Scale

AACSB: Analytic skills

Question Status: Previous Edition

12) What is minimum efficient scale? Why is it important?

Answer: Minimum efficient scale (MES) is the lowest rate of output per unit of time at which long-run average costs for a particular firm are at a minimum. If the MES is small relative to industry output, firms will be relatively small and numerous. If the MES is large relative to industry output, firms will be large and few.

Diff: 2

Topic: 22.8 Minimum Efficient Scale

AACSB: Analytic skills

Question Status: Previous Edition

13) For an industry in which average costs continue to decline as output rises, what would you expect the minimum efficient scale to be? Explain your answer.

Answer: When average costs continue to decline as output rises, the industry experiences economies of scale over all output levels. Thus, the long-run average cost curve only falls with increasing output. This means that the minimum efficient scale does not exist.

Diff: 2

Topic: 22.8 Minimum Efficient Scale

AACSB: Analytic skills

Question Status: Previous Edition

- 14) "If an industry's minimum efficient scale is between 2,000 and 4,000 units of output, then a firm producing 2,000 units of output in that industry has a cost-saving advantage over another firm producing 4,000 units of output in the same industry." Do you agree or disagree? Explain.

Answer: Disagree. If the minimum efficient scale is between 2,000 and 4,000 units of output, then the average costs are the same for any firm producing within that output range. This means that the firm producing 2,000 units of output has no cost-saving advantage over the firm producing 4,000 units of output.

Diff: 2

Topic: 22.8 Minimum Efficient Scale

AACSB: Analytic skills

Question Status: Previous Edition