

## CHAPTER 6

# The Organization and Costs of Production

Topic	Question numbers
6.1 The firm and the business sector	1-6
Legal forms of business	1-2
Advantages of corporations	3-4
The principal-agent problem	5-6
6.2 Economic costs	7-52
Explicit and implicit costs	7-20
Normal profit as a cost	21-26
Economic profit (or pure profit)	27-38
Short run and long run	39-52
6.3 Short-run production relationships	53-102
Total, marginal, and average product	53-62
Law of diminishing returns	63-102
6.4 Short-run production costs	103-230
Fixed, variable, and total costs	103-145
Per-unit, or average, costs	146-178
Marginal cost	179-224
Shifts of cost curves	225-230
6.5 Long-run production costs	231-292
Firm size and costs	231-235
The long-run cost curve	236-245
Economies and diseconomies of scale	246-282
Minimum efficient scale and industry structure	283-291
Applications and illustrations	292
The last word	293-297
True-False Questions	298-322

## Chapter 6 The organization and costs of production

1. A firm is a:

- A) Physical establishment which contributes to the production of goods and services
- B) Business organization which owns and operate plants
- C) Business organization which owns one plant
- D) Physical establishment which is owned by one person

Ans: B Level: Easy Main Topic: 6.1 The firm and the business sector  
Page: 135 Subtopic: Legal forms of business Type: Definition

2. The three basic legal forms of business are the:

- A) Vertically integrated, horizontally integrated and conglomerate
- B) Horizontally and vertically integrated and corporation
- C) Sole proprietorship, the partnership and the corporation
- D) Partnership, corporation and conglomerate

Ans: C Level: Easy Main Topic: 6.1 The firm and the business sector  
Page: 135 Subtopic: Legal forms of business Type: Definition

3. The advantage of sole proprietorship over partnership is that:

- A) it is easier to finance a business where there is only one owner.
- B) a greater specialization in the management level is possible.
- C) there is a limited liability in the sole proprietorship form of business while there is unlimited liability in case of partnership.
- D) the sole proprietor has substantial freedom of action.

Ans: D Level: Easy Main Topic: 6.1 The firm and the business sector  
Page: 135 Subtopic: Advantages of corporations Type: Application

4. The corporation is the most effective form of business organization because the corporation has:

- A) easier access to financial capital through selling bonds and stocks.
- B) an unlimited liability toward the stock owners.
- C) more freedom of action with respect to management.
- D) the problem of double taxation with respect to the corporate income.

Ans: A Level: Easy Main Topic: 6.1 The firm and the business sector  
Page: 135 Subtopic: Advantages of corporations Type: Application

## Chapter 6 The organization and costs of production

5. The principal-agent problem arises because:

- A) the agent wants to maximize the company's profit and stock prices while the owners want power and prestige.
- B) the owners want to maximize company's profit and stock prices while the agent wants power and prestige.
- C) the owners want expensive office building while the agent wants to maximize the Company's profit.
- D) The stock holders have unlimited liability in case of a loss while the agent does not.

Ans: B Level: Easy Main Topic: 6.1 The firm and the business sector

Page: 136 Subtopic: The principal-agent problem Type: Application

6. The principal-agent problem is:

- A) a conflict of interest that occurs when agents pursue their own objectives to the detriment of the principals.
- B) a conflict of interest that occurs when principals pursue their own objectives to the detriment of the agent.
- C) a conflict between the agent and principals with respect to the unlimited liability.
- D) a conflict between the agent and principals with respect to the location of company.

Ans: A Level: Easy Main Topic: 6.1 The firm and the business sector

Page: 136 Subtopic: The principal-agent problem Type: Definition

7. For an economy depicted in the table below, the opportunity cost of moving from combination A to combination B is:

Combination	Unit of capital products	Unit of consumer products
A	16	0
B	12	16
C	8	28
D	4	36
E	0	40

- A) 1 unit of capital product for each unit of consumer product.
- B)  $\frac{1}{2}$  unit of capital product for each unit of consumer product.
- C)  $\frac{3}{4}$  unit of capital product for each unit of consumer product.
- D)  $\frac{1}{4}$  unit of capital product for each unit of consumer product.

Ans: D Level: Moderate Main Topic: 6.2 Economic costs

Page: 137 Subtopic: Explicit and implicit costs Type: Calculation

## Chapter 6 The organization and costs of production

8. Economic cost can best be defined as:

- A) any contractual obligation which results in a flow of money expenditures from an enterprise to factor of production suppliers.
- B) any contractual obligation to labour or material suppliers.
- C) compensations which must be received by factor of production owners to insure their continued supply.
- D) all costs exclusive of payments to fixed factors of production.

Ans: C Level: Easy Main Topic: 6.2 Economic costs

Page: 137 Subtopic: Explicit and implicit costs Type: Definition

9. Costs to an economist:

- A) consist only of explicit costs.
- B) may or may not involve monetary outlays.
- C) never reflect monetary outlays.
- D) always reflect monetary outlays.

Ans: B Level: Easy Main Topic: 6.2 Economic costs

Page: 137 Subtopic: Explicit and implicit costs Type: Application

10. Suppose that you could prepare your own tax return in 15 hours, or you could hire a tax specialist to prepare it for you in 2 hours. You value your time at \$11.00 an hour. The tax specialist will charge you \$55 an hour. The opportunity cost of preparing your own tax return is:

- A) \$40.
- B) \$55.
- C) \$110.
- D) \$165.

Ans: D Level: Easy Main Topic: 6.2 Economic costs

Page: 137 Subtopic: Explicit and implicit costs Type: Calculation

11. An explicit cost is:

- A) omitted when accounting profits are calculated.
- B) a money payment made for factors of production not owned by the firm itself.
- C) an implicit cost to the factor of production owner who receives that payment.
- D) always in excess of a factor of production's opportunity cost.

Ans: B Level: Easy Main Topic: 6.2 Economic costs

Page: 137 Subtopic: Explicit and implicit costs Type: Definition

## Chapter 6 The organization and costs of production

12. Jon Brooks quit his job in a bicycle shop, where he earned \$15,000 per year, to become a graduate student in economics. At the university he attended, he spent \$2,000 on books, \$1,000 on cough medicine, and earned \$12,000 as an economics instructor per year. What were Jon's economic costs for a year while attending college?

A) \$18,000  
B) \$15,000  
C) \$6,000  
D) \$3,000

Ans: C Level: Moderate Main Topic: 6.2 Economic costs  
Page: 137 Subtopic: Explicit and implicit costs Type: Application

13. Implicit and explicit costs are different in that:

A) explicit costs are relevant only in the short run.  
B) implicit costs are relevant only in the short run.  
C) the latter refer to non-expenditure costs and the former to out-of-pocket costs.  
D) the former refer to non-expenditure costs and the latter to out-of-pocket costs.

Ans: D Level: Moderate Main Topic: 6.2 Economic costs  
Page: 137 Subtopic: Explicit and implicit costs Type: Definition

14. Implicit costs are:

A) regarded as costs by accountants but not by economists.  
B) payments which a firm makes to other firms or individuals who supply factors of production to it.  
C) non-expenditure costs.  
D) costs which vary proportionately with output.

Ans: C Level: Easy Main Topic: 6.2 Economic costs  
Page: 137 Subtopic: Explicit and implicit costs Type: Definition

15. Which of the following is most likely to be an implicit cost for Company X?

A) depreciation charges on company-owned equipment.  
B) rental payments on Nortel equipment.  
C) payments for raw materials purchased from Company Y.  
D) transportation costs paid to a nearby trucking concern.

Ans: A Level: Easy Main Topic: 6.2 Economic costs  
Page: 137 Subtopic: Explicit and implicit costs Type: Application

## Chapter 6 The organization and costs of production

16. What do wages paid to workers, interest paid on a bank loan, forgone interest, and the purchase of component parts have in common?
- A) none are either implicit or explicit costs.
  - B) all are opportunity costs.
  - C) all are implicit costs.
  - D) all are explicit costs.

Ans: B Level: Easy Main Topic: 6.2 Economic costs

Page: 137 Subtopic: Explicit and implicit costs Type: Application

Use the following to answer questions 17-22:

Harvey quit his job where he earned \$45,000 a year. He figures his entrepreneurial talent or foregone entrepreneurial income to be \$5,000 a year. To start the business, he cashed in \$100,000 in bonds that earned 10 percent interest annually to buy a software company, Extreme Gaming. In the first year, the firm sold 11,000 units of software at \$75 for each unit. Of the \$75 per unit, \$55 goes for the costs of production, packaging, marketing, employee wages and benefits, and rent on a building.

17. Refer to the information provided. The explicit costs of the firm in the first year were:
- A) \$150,000.
  - B) \$605,000.
  - C) \$665,000.
  - D) \$825,000.

Ans: B Level: Easy Main Topic: 6.2 Economic costs

Page: 137 Subtopic: Explicit and implicit costs Type: Calculation

18. Refer to the information provided. The implicit costs of the firm in the first year were:
- A) \$50,000.
  - B) \$60,000.
  - C) \$100,000.
  - D) \$150,000.

Ans: B Level: Moderate Main Topic: 6.2 Economic costs

Page: 137 Subtopic: Explicit and implicit costs Type: Calculation

19. Refer to the information provided. The accounting profit in the first year was:
- A) \$50,000.
  - B) \$70,000.
  - C) \$150,000.
  - D) \$220,000.

Ans: D Level: Easy Main Topic: 6.2 Economic costs

Page: 137 Subtopic: Explicit and implicit costs Type: Calculation

## Chapter 6 The organization and costs of production

20. Refer to the information provided. The total revenues for the firm in the first year were:

- A) \$50,000.
- B) \$100,000.
- C) \$605,000.
- D) \$825,000.

Ans: D Level: Easy Main Topic: 6.2 Economic costs

Page: 137 Subtopic: Explicit and implicit costs Type: Calculation

21. Refer to the information provided. The total economic costs (explicit and implicit, including a normal profit) in the first year were:

- A) \$60,000.
- B) \$150,000.
- C) \$665,000.
- D) \$825,000.

Ans: C Level: Moderate Main Topic: 6.2 Economic costs Page: 138

Subtopic: Normal profit as a cost Type: Calculation

22. Refer to the information provided. The normal profit in the first year was:

- A) \$5,000.
- B) \$10,000.
- C) \$45,000.
- D) \$60,000.

Ans: A Level: Moderate Main Topic: 6.2 Economic costs Page: 138

Subtopic: Normal profit as a cost Type: Calculation

23. To the economist total cost includes:

- A) explicit and implicit costs, including a normal profit.
- B) neither implicit nor explicit costs.
- C) implicit, but not explicit, costs.
- D) explicit, but not implicit, costs.

Ans: A Level: Easy Main Topic: 6.2 Economic costs

Page: 138 Subtopic: Normal profit as a cost Type: Application

## Chapter 6 The organization and costs of production

24. Accounting profits are typically:

- A) greater than economic profits because the former do not take explicit costs into account.
- B) equal to economic profits because accounting costs include all opportunity costs.
- C) smaller than economic profits because the former do not take implicit costs into account.
- D) greater than economic profits because the former do not take implicit costs into account.

Ans: D Level: Easy Main Topic: 6.2 Economic costs Page: 138  
Subtopic: Normal profit as a cost Type: Application

25. Normal profit is:

- A) determined by subtracting implicit costs from total revenue.
- B) determined by subtracting explicit costs from total revenue.
- C) payments that must be made by a firm to obtain and retain entrepreneurial ability.
- D) the average profitability of an industry over the preceding 10 years.

Ans: C Level: Moderate Main Topic: 6.2 Economic costs Page: 138  
Subtopic: Normal profit as a cost Type: Definition

26. Normal profits are:

- A) the profits reported by accountants on a firm's annual financial statement.
- B) identical to economic profits.
- C) determined by subtracting total costs from total revenues.
- D) considered an implicit cost by economists.

Ans: D Level: Easy Main Topic: 6.2 Economic costs Page: 138  
Subtopic: Normal profit as a cost Type: Application

27. Suppose that a business incurred implicit costs of \$200,000 and explicit costs of \$1 million in a specific year. If the firm sold 4,000 units of its output at \$300 per unit, its accounting profits were:

- A) \$100,000 and its economic profits were zero.
- B) \$200,000 and its economic profits were zero.
- C) \$100,000 and its economic profits were \$100,000.
- D) zero and its economic loss was \$200,000.

Ans: B Level: Moderate Main Topic: 6.2 Economic costs Page: 138  
Subtopic: Economic profit (or pure profit) Type: Calculation



## Chapter 6 The organization and costs of production

28. Suppose that a business incurred implicit costs of \$500,000 and explicit costs of \$5 million in a specific year. If the firm sold 100,000 units of its output at \$50 per unit, its accounting:
- A) profits were \$100,000 and its economic profits were zero.
  - B) losses were \$500,000 and its economic losses were zero.
  - C) profits were \$500,000 and its economic profits were \$1 million.
  - D) profit were zero and, its economic losses were \$500,000.

Ans: D Level: Moderate Main Topic: 6.2 Economic costs Page: 138  
Subtopic: Economic profit (or pure profit) Type: Calculation

29. Suppose that a firm produces 200,000 units a year and sells them all for \$10 each. The explicit costs of production are \$1,500,000 and the implicit costs of production are \$300,000. The firm has an accounting profit of:
- A) \$500,000 and an economic profit of \$200,000.
  - B) \$400,000 and an economic profit of \$200,000.
  - C) \$300,000 and an economic profit of \$400,000.
  - D) \$200,000 and an economic profit of \$500,000.

Ans: A Level: Moderate Main Topic: 6.2 Economic costs Page: 138  
Subtopic: Economic profit (or pure profit) Type: Calculation

30. If a firm's revenues just cover all its opportunity costs, then:
- A) normal profit is zero.
  - B) economic profit is zero.
  - C) total revenues equal its explicit costs.
  - D) total revenues equal its implicit costs.

Ans: B Level: Easy Main Topic: 6.2 Economic costs Page: 138  
Subtopic: Economic profit (or pure profit) Type: Application

31. Which of the following definitions is correct?
- A) Accounting profit + economic profit = normal profit.
  - B) Economic profit - accounting profit = explicit costs.
  - C) Economic profit = accounting profit - implicit costs.
  - D) Economic profit - implicit costs = accounting profits.

Ans: C Level: Moderate Main Topic: 6.2 Economic costs Page: 138  
Subtopic: Economic profit (or pure profit) Type: Definition

## Chapter 6 The organization and costs of production

32. Economic profits are calculated by subtracting:

- A) explicit costs from total revenue.
- B) implicit costs from total revenue.
- C) implicit costs from normal profits.
- D) explicit and implicit costs from total revenue.

Ans: D Level: Easy Main Topic: 6.2 Economic costs Page: 138

Subtopic: Economic profit (or pure profit) Type: Application

33. Economic profit is:

- A) total revenues minus fixed costs.
- B) total revenues from sales minus the cost of materials.
- C) total revenues minus the opportunity cost of the inputs.
- D) gross profit minus selling and operating expenses.

Ans: C Level: Easy Main Topic: 6.2 Economic costs Page: 138

Subtopic: Economic profit (or pure profit) Type: Definition

34. Economic profit for a company is defined as the total revenues of the firm minus the:

- A) opportunity cost of all factors of production.
- B) explicit costs of production.
- C) implicit cost of production.
- D) accounting profit.

Ans: A Level: Easy Main Topic: 6.2 Economic costs Page: 138

Subtopic: Economic profit (or pure profit) Type: Definition

35. An industry is expected to expand if firms in the industry are earning:

- A) normal profits.
- B) economic profits.
- C) accounting profits.
- D) profits that exactly cover all of the firms' opportunity costs.

Ans: B Level: Easy Main Topic: 6.2 Economic costs Page: 138

Subtopic: Economic profit (or pure profit) Type: Application

36. Suppose a firm sells its product at a price lower than the opportunity cost of the inputs used to produce it. Which of the following is true?

- A) The firm will earn accounting and economic profits.
- B) The firm will face accounting and economic losses.
- C) The firm will face an accounting loss, but earn economic profits.
- D) The firm may earn accounting profits, but will face economic losses.

Ans: D Level: Moderate Main Topic: 6.2 Economic costs Page: 138

Subtopic: Economic profit (or pure profit) Type: Application

## Chapter 6 The organization and costs of production

Use the following to answer questions 37-38:

Harvey quit his job where he earned \$45,000 a year. He figures his entrepreneurial talent or foregone entrepreneurial income to be \$5,000 a year. To start the business, he cashed in \$100,000 in bonds that earned 10 percent interest annually to buy a software company, Extreme Gaming. In the first year, the firm sold 11,000 units of software at \$75 for each unit. Of the \$75 per unit, \$55 goes for the costs of production, packaging, marketing, employee wages and benefits, and rent on a building.

37. Refer to the information provided. The economic profit in the first year was:

- A) \$50,000.
- B) \$70,000.
- C) \$160,000.
- D) \$220,000.

Ans: C Level: Moderate Main Topic: 6.2 Economic costs Page: 138  
Subtopic: Economic profit (or pure profit) Type: Calculation

38. Refer to the information provided. If the price of the product rose to \$85, then the economic profit will be:

- A) \$60,000.
- B) \$220,000.
- C) \$270,000.
- D) \$330,000.

Ans: C Level: Moderate Main Topic: 6.2 Economic costs Page: 138  
Subtopic: Economic profit (or pure profit) Type: Calculation

39. In the short run:

- A) a firm cannot vary its output.
- B) all factors of production can be varied.
- C) a firm can change its fixed inputs.
- D) output can be changed by using different levels of variable inputs.

Ans: D Level: Easy Main Topic: 6.2 Economic costs Page: 138  
Subtopic: Short run and long run Type: Application

40. The short run is a time period in which:

- A) all factors of production are fixed.
- B) the level of output is fixed.
- C) the size of the production plant is variable.
- D) some factors of production are fixed and others are variable.

Ans: D Level: Easy Main Topic: 6.2 Economic costs Page: 138-139  
Subtopic: Short run and long run Type: Definition

## Chapter 6 The organization and costs of production

41. The short run is a period in which:

- A) there are economies of scale.
- B) there are diseconomies of scale.
- C) the plant capacity for a firm is fixed.
- D) the plant capacity for a firm is variable.

Ans: C Level: Easy Main Topic: 6.2 Economic costs Page: 139  
Subtopic: Short run and long run Type: Application

42. In the short run, output:

- A) is absolutely fixed.
- B) can vary as the result of using a fixed amount of plant and equipment more or less intensively.
- C) may be altered by varying the size of plant and equipment which now exist in the industry.
- D) can vary as the result of changing the size of existing plants and by new firms entering or leaving the industry.

Ans: B Level: Easy Main Topic: 6.2 Economic costs Page: 139  
Subtopic: Short run and long run Type: Application

43. Which of the following is a short-run adjustment?

- A) A local bakery hires two additional bakers.
- B) Six new firms enter the plastics industry.
- C) The number of farms in Canada declines by 5 percent.
- D) Chevrolet constructs a new assembly plant in Oshawa.

Ans: A Level: Moderate Main Topic: 6.2 Economic costs Page: 139  
Subtopic: Short run and long run Type: Application

44. The short run is characterized by:

- A) plenty of time for firms to either enter or leave the industry.
- B) increasing, but not diminishing returns.
- C) at least one fixed factor of production.
- D) zero fixed costs.

Ans: C Level: Easy Main Topic: 6.2 Economic costs Page: 139  
Subtopic: Short run and long run Type: Application

## Chapter 6 The organization and costs of production

45. The basic characteristic of the short run is that:

- A) barriers to entry prevent new firms from entering the industry.
- B) the firm does not have sufficient time to change the size of its plant.
- C) the firm does not have sufficient time to cut its rate of output to zero.
- D) a firm does not have sufficient time to change the amounts of any of the factors of production it employs.

Ans: B Level: Easy Main Topic: 6.2 Economic costs Page: 139  
Subtopic: Short run and long run Type: Application

46. To economists the main difference between "the short run" and "the long run" is that:

- A) the law of diminishing returns applies in the long run, but not in the short run.
- B) in the long run all factors of production are variable, while in the short run at least one factor of production is fixed.
- C) fixed costs are more important to decision making in the long run than they are in the short run.
- D) in the short run all factors of production are fixed, while in the long run all factors of production are variable.

Ans: B Level: Easy Main Topic: 6.2 Economic costs Page: 139  
Subtopic: Short run and long run Type: Definition

47. The basic difference between the "short run" and the "long run" is that:

- A) all costs are fixed in the short run, but all costs are variable in the long run.
- B) the law of diminishing returns applies in the long run, but not in the short run.
- C) at least one factor of production is fixed in the short run, while all factors of production are variable in the long run.
- D) economies of scale may be present in the short run, but not in the long run.

Ans: C Level: Easy Main Topic: 6.2 Economic costs Page: 139  
Subtopic: Short run and long run Type: Application

48. The amount of calendar time associated with the long run:

- A) is less than that associated with the immediate market period.
- B) varies from industry to industry.
- C) is the same for all firms.
- D) is one year by definition.

Ans: B Level: Easy Main Topic: 6.2 Economic costs Page: 139  
Subtopic: Short run and long run Type: Application

## Chapter 6 The organization and costs of production

49. Which statement is correct?

- A) In the short run the plant capacity is variable.
- B) In the long run the plant capacity is variable.
- C) In the long run the plant capacity is fixed.
- D) In the short run, all factors of production are variable.

Ans: B Level: Easy Main Topic: 6.2 Economic costs Page: 139  
Subtopic: Short run and long run Type: Application

50. The long run is a period of time for which:

- A) all factors of production are fixed.
- B) the level of output is fixed.
- C) the amount of all factors of production can be varied.
- D) the sized of the production plant is fixed.

Ans: C Level: Easy Main Topic: 6.2 Economic costs Page: 139  
Subtopic: Short run and long run Type: Definition

51. Which of the following represents a long-run adjustment?

- A) a farmer uses an extra dose of fertilizer on his corn crop.
- B) unable to meet foreign competition, a Canadian watch manufacturer sells one of its branch plants.
- C) a steel manufacturer cuts back on its purchases of coke and iron ore.
- D) a supermarket hires four additional clerks.

Ans: B Level: Moderate Main Topic: 6.2 Economic costs Page: 139  
Subtopic: Short run and long run Type: Application

52. The long run is characterized by:

- A) the relevance of the law of diminishing returns.
- B) at least one fixed input.
- C) insufficient time for firms to enter or leave the industry.
- D) the ability of the firm to change its plant size.

Ans: D Level: Easy Main Topic: 6.2 Economic costs Page: 139  
Subtopic: Short run and long run Type: Application

## Chapter 6 The organization and costs of production

53. The graph of a total product curve shows the:

- A) minimum level of output that can be produced by a quantity of a variable factor of production holding constant the quantity of other factors of production.
- B) minimum level of output that can be produced by a quantity of a fixed factor of production letting other factors of production vary.
- C) maximum level of output that can be produced by a quantity of a fixed factor of production letting other factors of production vary.
- D) maximum level of output that can be produced by a quantity of a variable factor of production holding constant the quantity of other factors of production.

Ans: D Level: Moderate Main Topic: 6.3 Short-run production relationships

Page: 140 Subtopic: Total, marginal, and average product Type: Definition

54. Marginal product is:

- A) the increase in total output attributable to the employment of one more worker.
- B) the increase in total revenue attributable to the employment of one more worker.
- C) the increase in total cost attributable to the employment of one more worker.
- D) total product divided by the number of workers employed.

Ans: A Level: Easy Main Topic: 6.3 Short-run production relationships

Page: 140 Subtopic: Total, marginal, and average product Type: Definition

55. Marginal product:

- A) diminishes at all levels of production.
- B) may initially increase, then diminish, but never become negative.
- C) may initially increase, then diminish, and ultimately become negative.
- D) is always less than average product.

Ans: C Level: Easy Main Topic: 6.3 Short-run production relationships

Page: 140 Subtopic: Total, marginal, and average product Type: Application

56. The marginal product of labour curve shows the change in total product resulting from a:

- A) One-unit increase in the quantity of a particular factor of production used, letting other factors of production vary.
- B) One-unit increase in the quantity of a particular factor of production used, holding constant other factors of production.
- C) change in the cost of a variable factor of production.
- D) change in the cost of a fixed factor of production.

Ans: B Level: Easy Main Topic: 6.3 Short-run production relationships

Page: 140 Subtopic: Total, marginal, and average product Type: Definition

## Chapter 6 The organization and costs of production

57. The marginal product of a factor of production is measured by:

- A) workers employed.
- B) production cost.
- C) output produced.
- D) capital employed.

Ans: C Level: Easy Main Topic: 6.3 Short-run production relationships  
Page: 140 Subtopic: Total, marginal, and average product Type: Definition

Use the following to answer questions 58-59:

Output data for a firm. Assume that the amounts of all non-labour factors of production are fixed.

Number of workers	Units of output
0	0
1	40
2	90
3	126
4	150
5	165
6	180

58. Refer to the data above. The marginal product of the sixth worker:

- A) is 180 units of output.
- B) is 30 units of output.
- C) is 15 units of output.
- D) is negative.

Ans: C Level: Easy Main Topic: 6.3 Short-run production relationships  
Page: 140 Subtopic: Total, marginal, and average product Type: Calculation

59. Refer to the data above. Average product is at a maximum when:

- A) five workers are hired.
- B) four workers are hired.
- C) three workers are hired.
- D) two workers are hired.

Ans: D Level: Easy Main Topic: 6.3 Short-run production relationships  
Page: 140 Subtopic: Total, marginal, and average product Type: Calculation



## Chapter 6 The organization and costs of production

Use the following to answer questions 60-63:

Assume that the only variable factor of production used to produce output is labour.

Amount of Labour	Total Product
1	6
2	16
3	24
4	30
5	34
6	36

60. Refer to the table above. The marginal product of the fourth unit of labour is:

- A) 4 units of output.
- B) 6 units of output.
- C) 8 units of output.
- D) 30 units of output.

Ans: B Level: Easy Main Topic: 6.3 Short-run production relationships  
Page: 140 Subtopic: Total, marginal, and average product Type: Calculation

61. Refer to the table above. When the firm hires four units of labour the average product of labour is:

- A) 5 units of output.
- B) 6.50 units of output.
- C) 8.50 units of output.
- D) 30 units of output.

Ans: B Level: Easy Main Topic: 6.3 Short-run production relationships  
Page: 140 Subtopic: Total, marginal, and average product Type: Calculation

62. Refer to the table above. There are increasing marginal returns through the:

- A) first unit of labour.
- B) second unit of labour.
- C) third unit of labour.
- D) fourth unit of labour.

Ans: B Level: Easy Main Topic: 6.3 Short-run production relationships  
Page: 140 Subtopic: Total, marginal, and average product Type: Calculation

## Chapter 6 The organization and costs of production

63. Refer to the table above. Diminishing marginal returns set in with the addition of the:
- A) first unit of labour.
  - B) second unit of labour.
  - C) third unit of labour.
  - D) fourth unit of labour.

Ans: C Level: Moderate Main Topic: 6.3 Short-run production relationships  
Page: 140 Subtopic: Law of diminishing returns Type: Calculation

64. The law of diminishing returns indicates that:
- A) as extra units of a variable factor of production are added to a fixed factor of production, marginal product will decline beyond some point.
  - B) because of economies and diseconomies of scale a competitive firm's long-run average total cost curve will be U-shaped.
  - C) the demand for goods produced by purely competitive industries is downward sloping.
  - D) beyond some point the extra utility derived from additional units of a product will yield the consumer smaller and smaller extra amounts of satisfaction.

Ans: A Level: Easy Main Topic: 6.3 Short-run production relationships  
Page: 140 Subtopic: Law of diminishing returns Type: Definition

65. The law of diminishing returns implies:
- A) the more hours you spend studying the less you will know.
  - B) your understanding will be increased by decreasing your marginal study time.
  - C) eventually, the more hours you spend studying per day, the less you will learn with each added hour.
  - D) the more hours you spend studying per day, the more you will learn with each added hour.

Ans: C Level: Easy Main Topic: 6.3 Short-run production relationships  
Page: 140 Subtopic: Law of diminishing returns Type: Application

## Chapter 6 The organization and costs of production

66. Which of the following best expresses the law of diminishing returns?
- A) Because large-scale production allows the realization of economies of scale, the real costs of production vary directly with the level of output.
  - B) Population growth automatically adjusts to that level at which the average product per worker will be at a maximum.
  - C) As successive amounts of one factor of production (labour) are added to fixed amounts of other factors of production (property), beyond some point the resulting extra output will decline.
  - D) Proportionate increases in the inputs of all factors of production will result in a less-than-proportionate increase in total output.

Ans: C Level: Moderate Main Topic: 6.3 Short-run production relationships  
Page: 140 Subtopic: Law of diminishing returns Type: Definition

67. Diminishing returns are observed as a firm increases production by adding variable inputs to at least one fixed input because:
- A) the ability or quality of the variable inputs hired decreases as more are hired.
  - B) the firm must lower the price of its product when it produces more units of output.
  - C) the per unit cost it must pay for variable inputs increases as more inputs are hired.
  - D) as more variable inputs are hired, the amount of the fixed input per variable input they have to work with decreases.

Ans: D Level: Moderate Main Topic: 6.3 Short-run production relationships  
Page: 140 Subtopic: Law of diminishing returns Type: Application

68. "If a variable input is added to some fixed input, beyond some point the resulting extra output will decline." This statement describes:
- A) economies and diseconomies of scale.
  - B) X-inefficiency.
  - C) the law of diminishing returns.
  - D) the law of diminishing marginal utility.

Ans: C Level: Easy Main Topic: 6.3 Short-run production relationships  
Page: 140 Subtopic: Law of diminishing returns Type: Definition

69. The law of diminishing returns results in:
- A) an eventually rising marginal product curve.
  - B) a total product curve which eventually increases at a decreasing rate.
  - C) an eventually falling marginal cost curve.
  - D) a total product curve which rises indefinitely.

Ans: B Level: Moderate Main Topic: 6.3 Short-run production relationships  
Page: 140 Subtopic: Law of diminishing returns Type: Application

## Chapter 6 The organization and costs of production

70. The law of diminishing returns describes the:

- A) relationship between total costs and total revenues.
- B) profit-maximizing position of a firm.
- C) relationship between factor of production inputs and product outputs in the short run.
- D) relationship between factor of production inputs and product outputs in the long run.

Ans: C Level: Easy Main Topic: 6.3 Short-run production relationships  
Page: 140 Subtopic: Law of diminishing returns Type: Definition

71. Which statement best illustrates the law of diminishing returns?

- A) The average total cost of the last unit of a factor of production used is less than the average total cost of the previous factor of production used.
- B) The marginal product of the last unit of a factor of production used is less than the marginal product of the previous factor of production used.
- C) The average product of the last unit of a factor of production used is less than the average product of the previous factor of production used.
- D) The marginal cost of the last unit of a factor of production used is less than the marginal cost of the previous factor of production used.

Ans: B Level: Moderate Main Topic: 6.3 Short-run production relationships  
Page: 140 Subtopic: Law of diminishing returns Type: Definition

72. Which statement is true?

- A) Diminishing returns set in after marginal product intersects average product.
- B) Underlying the law of diminishing returns is the assumption that at least one input remains fixed.
- C) The law of diminishing marginal returns implies that there will never be increasing returns to scale.
- D) Given a total product curve for labour,  $Q = 5L$ , labour is only subject to diminishing marginal returns after  $L = 5$ .

Ans: B Level: Moderate Main Topic: 6.3 Short-run production relationships  
Page: 140 Subtopic: Law of diminishing returns Type: Definition

73. The law of diminishing returns explains:

- A) why there are diseconomies of scale.
- B) the increases in short-run marginal costs.
- C) increases in wage rates as labour becomes more scarce.
- D) the decline in average fixed cost as more output is produced.

Ans: B Level: Difficult Main Topic: 6.3 Short-run production relationships  
Page: 141 Type: Application

## Chapter 6 The organization and costs of production

Use the following to answer question 74:

Refer to the following output data for a firm. Assume that the amounts of all non-labour factors of production are fixed.

<u>Number of workers</u>	<u>Units of output</u>
0	0
1	40
2	90
3	126
4	150
5	165
6	180

74. Refer to the table above. Diminishing marginal returns become evident with the addition of:
- A) the sixth worker.
  - B) the fourth worker.
  - C) the third worker.
  - D) the second worker.

Ans: C Level: Easy Main Topic: 6.3 Short-run production relationships  
Page: 141 Subtopic: Law of diminishing returns Type: Calculation

75. The first, second, and third workers employed by a firm add 24, 18, and 9 units to total product respectively. We can conclude that:
- A) the marginal product of the third worker is 9.
  - B) the total product of the three workers is 54.
  - C) the average product of the three workers is 18.
  - D) the marginal product of the second worker is 18.

Ans: A Level: Moderate Main Topic: 6.3 Short-run production relationships  
Page: 141 Subtopic: Law of diminishing returns Type: Calculation

## Chapter 6 The organization and costs of production

Use the following to answer questions 76-77:

<u>Number of workers</u>	<u>Total product</u>	<u>Marginal product</u>
0	0	--
1	8	8
2		10
3	25	
4	30	
5		3
6	34	

76. Refer to the data above. When two workers are employed:

- A) total product is 20.
- B) total product is 18.
- C) average product is 10.
- D) total product cannot be determined from the information given.

Ans: B Level: Easy Main Topic: 6.3 Short-run production relationships  
Page: 141- 142 Subtopic: Law of diminishing returns Type: Calculation

77. Refer to the data above. The marginal product of the fourth worker:

- A) is 5
- B) is 7.
- C) is  $7\frac{1}{2}$ .
- D) cannot be calculated from the information given.

Ans: A Level: Easy Main Topic: 6.3 Short-run production relationships  
Page: 141- 142 Subtopic: Law of diminishing returns Type: Calculation

## Chapter 6 The organization and costs of production

Use the following to answer questions 78-82:

The following table provides information on the production of a product that requires one variable input.

<u>Input</u>	<u>Total product</u>
0	0
1	5
2	20
3	32
4	42
5	50
6	55
7	58
8	58
9	56

78. Refer to the table above. There are increasing marginal returns through the:

- A) first unit of variable input.
- B) second unit of variable input.
- C) third unit of variable input.
- D) fourth unit of variable input.

Ans: B Level: Easy Main Topic: 6.3 Short-run production relationships  
Page: 141- 142 Subtopic: Law of diminishing returns Type: Calculation

79. Refer to the table above. Diminishing returns set in with the addition of the:

- A) first unit of input.
- B) second unit of input.
- C) third unit of input.
- D) fourth unit of input.

Ans: C Level: Easy Main Topic: 6.3 Short-run production relationships  
Page: 141- 142 Subtopic: Law of diminishing returns Type: Calculation

80. Refer to the table above. There are negative marginal returns when the:

- A) fifth unit of input is added.
- B) sixth unit of input is added.
- C) seventh unit of input is added.
- D) ninth unit of input is added.

Ans: D Level: Easy Main Topic: 6.3 Short-run production relationships  
Page: 141- 142 Subtopic: Law of diminishing returns Type: Calculation

## Chapter 6 The organization and costs of production

81. Refer to the table above. With the addition of the first unit of input, the marginal product is:
- A) 5 and the average product is 8.4.
  - B) 5 and the average product is 5.0.
  - C) 8 and the average product is 8.4.
  - D) 8 and the average product is 10.0.

Ans: B Level: Easy Main Topic: 6.3 Short-run production relationships  
Page: 141- 142 Subtopic: Law of diminishing returns Type: Calculation

82. Refer to the table above. When the marginal product is zero, then total product is:
- A) 50.
  - B) 55.
  - C) 56.
  - D) 58.

Ans: D Level: Easy Main Topic: 6.3 Short-run production relationships  
Page: 141- 142 Subtopic: Law of diminishing returns Type: Calculation

Use the following to answer questions 83-85:

<u>Inputs of labour</u>	<u>Total product</u>
0	0
1	8
2	18
3	25
4	30
5	33
6	34
7	32

83. Refer to the data above. When total product is increasing at an increasing rate, marginal product is:
- A) positive and increasing.
  - B) positive and decreasing.
  - C) constant.
  - D) negative.

Ans: A Level: Easy Main Topic: 6.3 Short-run production relationships  
Page: 142-143 Subtopic: Law of diminishing returns Type: Calculation



## Chapter 6 The organization and costs of production

84. Refer to the data above. When total product is increasing at a decreasing rate, marginal product is:

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

Ans: B Level: Easy Main Topic: 6.3 Short-run production relationships  
Page: 142-143 Subtopic: Law of diminishing returns Type: Calculation

85. Refer to the data above. When total product is diminishing, marginal product is:

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

Ans: D Level: Easy Main Topic: 6.3 Short-run production relationships  
Page: 142-143 Subtopic: Law of diminishing returns Type: Calculation

86. Which of the following statements concerning the relationships between total product (TP), average product (AP), and marginal product (MP) is not correct?

- A) AP continues to rise so long as TP is rising.
- B) AP reaches a maximum before TP reaches a maximum.
- C) TP reaches a maximum when the MP of the variable input becomes zero.
- D) MP cuts AP at the maximum AP.

Ans: A Level: Difficult Main Topic: 6.3 Short-run production relationships  
Page: 142-143 Subtopic: Law of diminishing returns Type: Graphic

87. If in the short run a firm's total product is increasing, then its:

- A) marginal product must also be increasing.
- B) marginal product must be decreasing.
- C) marginal product could be either increasing or decreasing.
- D) average product must also be increasing.

Ans: C Level: Moderate Main Topic: 6.3 Short-run production relationships  
Page: 142-143 Subtopic: Law of diminishing returns Type: Graphic

## Chapter 6 The organization and costs of production

88. Which of the following is correct?

- A) When total product is rising, both average product and marginal product must also be rising.
- B) When marginal product is falling, total product must be falling.
- C) When marginal product is falling, average product must also be falling.
- D) Marginal product rises faster than average product and also falls faster than average product.

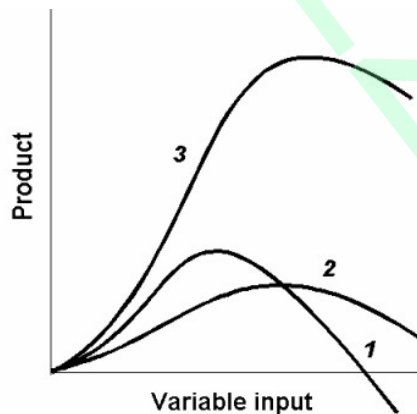
Ans: D Level: Difficult Main Topic: 6.3 Short-run production relationships  
Page: 142-143 Subtopic: Law of diminishing returns Type: Graphic

89. Which of the following is not correct?

- A) Where marginal product is greater than average product, average product is rising.
- B) Where total product is at a maximum, average product is also at a maximum.
- C) Where marginal product is zero, total product is at a maximum.
- D) Marginal product becomes negative before average product becomes negative.

Ans: B Level: Difficult Main Topic: 6.3 Short-run production relationships  
Page: 142-143 Subtopic: Law of diminishing returns Type: Graphic

Use the following to answer questions 90-91:



90. In the diagram above, curves 1, 2, and 3 represent the:

- A) average, marginal, and total product curves respectively.
- B) marginal, average, and total product curves respectively.
- C) total, average, and marginal product curves respectively.
- D) total, marginal, and average product curves respectively.

Ans: B Level: Easy Main Topic: 6.3 Short-run production relationships  
Page: 142-143 Subtopic: Law of diminishing returns Type: Graphic

## Chapter 6 The organization and costs of production

91. The diagram above suggests that:

- A) when marginal product is zero, total product is at a maximum.
- B) when marginal product lies above average product, average product is rising.
- C) when marginal product lies below average product, average product is falling.
- D) all of the above hold true.

Ans: D Level: Difficult Main Topic: 6.3 Short-run production relationships  
Page: 142-143 Subtopic: Law of diminishing returns Type: Graphic

92. The total output of a firm will be at a maximum where:

- A) MP is at a maximum.
- B) AP is at a minimum.
- C) MP is zero.
- D) AP is at a maximum.

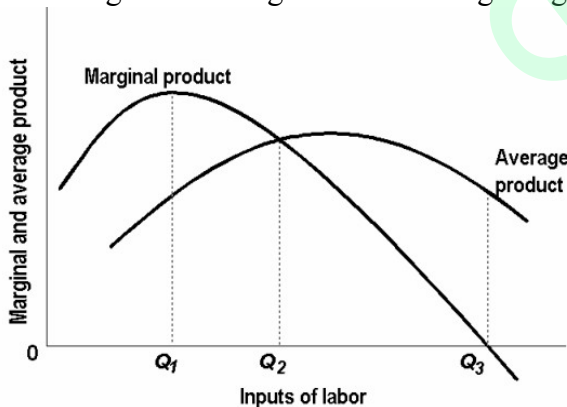
Ans: C Level: Easy Main Topic: 6.3 Short-run production relationships  
Page: 142-143 Subtopic: Law of diminishing returns Type: Graphic

93. In the short run, total product begins to decrease at the point where the:

- A) average product of labour is zero.
- B) marginal product of labour is zero.
- C) average product of labour is negative.
- D) average product of labour is declining.

Ans: B Level: Easy Main Topic: 6.3 Short-run production relationships  
Page: 142-143 Subtopic: Law of diminishing returns Type: Graphic

94. In the diagram the range of diminishing marginal returns is:



- A)  $0Q_3$ .
- B)  $0Q_2$ .
- C)  $Q_1Q_2$ .
- D)  $Q_1Q_3$ .

Ans: D Level: Easy Main Topic: 6.3 Short-run production relationships  
Page: 142-143 Subtopic: Law of diminishing returns Type: Graphic

## Chapter 6 The organization and costs of production

95. When the total product curve is falling, the:
- A) marginal product of labour is zero.
  - B) marginal product of labour is negative.
  - C) average product of labour is increasing.
  - D) average product of labour must be negative.

Ans: B Level: Moderate Main Topic: 6.3 Short-run production relationships  
Page: 142-143 Subtopic: Law of diminishing returns Type: Graphic

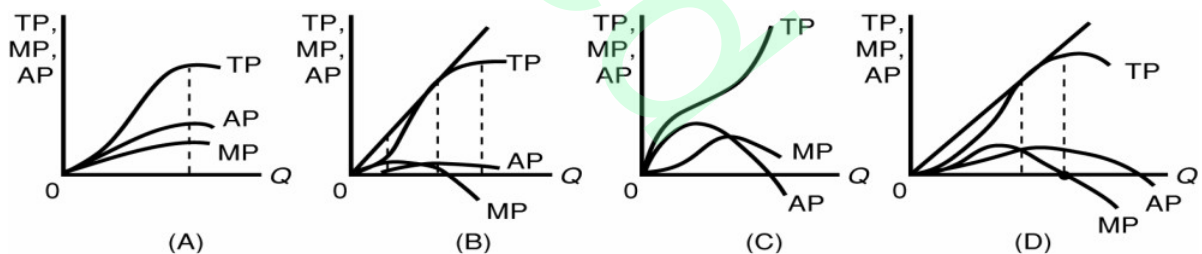
96. The range of diminishing marginal productivity begins when:
- A) total product begins to fall.
  - B) average product reaches its maximum.
  - C) marginal product reaches its maximum.
  - D) marginal product begins to fall at an increasing rate.

Ans: C Level: Easy Main Topic: 6.3 Short-run production relationships  
Page: 142-143 Subtopic: Law of diminishing returns Type: Graphic

97. When marginal product reaches its maximum, what can be said of total product?
- A) total product must be at its maximum
  - B) total product starts to decline even if marginal product is positive
  - C) total product is increasing if marginal product is still positive
  - D) total product levels off

Ans: C Level: Difficult Main Topic: 6.3 Short-run production relationships  
Page: 142-143 Subtopic: Law of diminishing returns Type: Application

98. Which of the graphs below properly depicts the relationships TP, AP, and MP?

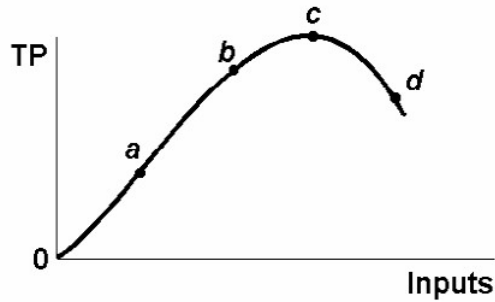


- A) graph A
- B) graph B
- C) graph C
- D) graph D

Ans: D Level: Difficult Main Topic: 6.3 Short-run production relationships  
Page: 142-143 Subtopic: Law of diminishing returns Type: Graphic

## Chapter 6 The organization and costs of production

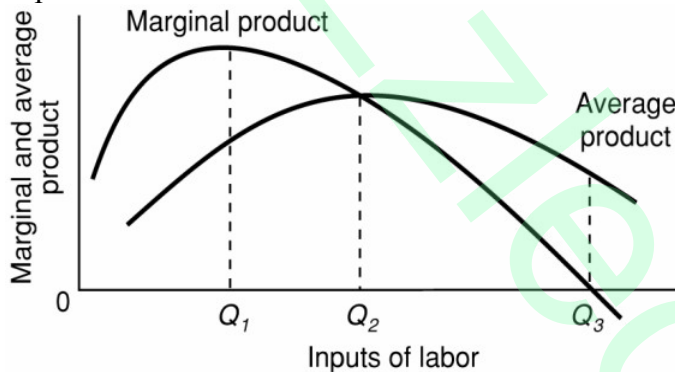
99. At which point is marginal product smallest?



- A) point a
- B) point b
- C) point c
- D) point d

Ans: D Level: Easy Main Topic: 6.3 Short-run production relationships  
Page: 142-143 Subtopic: Law of diminishing returns Type: Graphic

100. Refer to the diagram. Where variable inputs of labour are being added to a constant amount of property factors of production. The total output of this firm will cease to expand:



- A) if a labour force in excess of  $Q_1$  is employed.
- B) if a labour force in excess of  $Q_2$  is employed.
- C) if a labour force in excess of  $Q_3$  is employed.
- D) only if the marginal product curve becomes negative at all levels of output.

Ans: C Level: Moderate Main Topic: 6.3 Short-run production relationships  
Page: 142-143 Subtopic: Law of diminishing returns Type: Graphic

## Chapter 6 The organization and costs of production

101. At what point does marginal product equal average product?

- A) where average product is equal to its minimum value
- B) where average product is equal to its maximum value
- C) where marginal product is equal to its minimum value
- D) where marginal product is equal to its maximum value

Ans: B Level: Difficult Main Topic: 6.4 Short-run production costs  
Page: 142-143 Subtopic: Law of diminishing returns Type: Graphic

102. Where there are diminishing marginal returns to a variable factor of production the:

- A) average product curve approaches the marginal product curve from above.
- B) average product curve approaches the total product curve from below.
- C) marginal product curve approaches the average product curve from below.
- D) marginal product curve approaches the average product curve from above.

Ans: D Level: Difficult Main Topic: 6.4 Short-run production costs  
Page: 142-143 Subtopic: Law of diminishing returns Type: Graphic

103. Fixed cost is:

- A) the cost of producing one more unit of capital, say, machinery.
- B) any cost which does not change when the firm changes its output.
- C) average cost multiplied by the firm's output.
- D) usually zero in the short run

Ans: B Level: Easy Main Topic: 6.4 Short-run production costs Page: 144  
Subtopic: Fixed, variable, and total costs Type: Definition

104. A fixed cost is:

- A) associated with any productive factor of production whose price is fixed.
- B) any cost which increases proportionately with output.
- C) any cost which a firm would incur even if output was zero.
- D) associated with all inputs whose short-run supply is perfectly inelastic.

Ans: C Level: Easy Main Topic: 6.4 Short-run production costs Page: 144  
Subtopic: Fixed, variable, and total costs Type: Definition

105. Which of the following is most likely to be a fixed cost?

- A) shipping charges
- B) property insurance premiums
- C) wages for unskilled labour
- D) expenditures for raw materials

Ans: B Level: Easy Main Topic: 6.4 Short-run production costs Page: 144  
Subtopic: Fixed, variable, and total costs Type: Application

## Chapter 6 The organization and costs of production

106. If you owned a small farm, which of the following would be a fixed cost?

- A) harvest labour
- B) hail insurance
- C) fertilizer
- D) seed

Ans: B Level: Easy Main Topic: 6.4 Short-run production costs Page: 144  
Subtopic: Fixed, variable, and total costs Type: Application

107. Which of the following is the best example of a fixed cost of production to a firm?

- A) depreciation of capital
- B) wages paid to workers
- C) electricity charges
- D) advertising

Ans: A Level: Easy Main Topic: 6.4 Short-run production costs Page: 144  
Subtopic: Fixed, variable, and total costs Type: Application

108. The level of fixed costs of production for a firm:

- A) cannot increase in the short run.
- B) is a function of the level of variable costs.
- C) is low in proportion to variable costs in the short run.
- D) is independent of the level of output in the short run.

Ans: D Level: Easy Main Topic: 6.4 Short-run production costs Page: 144  
Subtopic: Fixed, variable, and total costs Type: Application

109. If a firm decides to produce no output in the short run, its costs will be:

- A) its marginal costs.
- B) its fixed plus its variable costs.
- C) its fixed costs.
- D) zero.

Ans: C Level: Moderate Main Topic: 6.4 Short-run production costs Page: 144  
Subtopic: Fixed, variable, and total costs Type: Application

110. If you know that when a firm produces 10 units of output, total costs are \$1,030 and average fixed costs are \$10, then total fixed costs are:

- A) \$5.
- B) \$100.
- C) \$1,020.
- D) \$1,040.

Ans: B Level: Moderate Main Topic: 6.4 Short-run production costs Page: 144  
Subtopic: Fixed, variable, and total costs Type: Calculation

## Chapter 6 The organization and costs of production

111. Total fixed cost (TFC):

- A) falls as the firm expands output from zero, but eventually rises.
- B) falls continuously as total output expands.
- C) varies directly with total output.
- D) does not change as total output increases or decreases.

Ans: D Level: Easy Main Topic: 6.4 Short-run production costs Page: 144  
Subtopic: Fixed, variable, and total costs Type: Application

112. Fixed costs are associated with:

- A) highly adjustable inputs such as labour.
- B) both the short run and the long run.
- C) the short run only.
- D) the long run only.

Ans: C Level: Easy Main Topic: 6.4 Short-run production costs Page: 144  
Subtopic: Fixed, variable, and total costs Type: Application

113. Which is not a fixed cost?

- A) monthly rent of \$1,000 contractually specified in a one-year lease
- B) an insurance premium of \$50 per year, paid last month
- C) an attorney's retainer of \$50,000 per year
- D) a worker's wage of \$15 per hour

Ans: D Level: Moderate Main Topic: 6.4 Short-run production costs Page: 144  
Subtopic: Fixed, variable, and total costs Type: Application

114. Assume that in the short run a firm is producing 100 units of output, has average total costs of \$200, and average variable costs of \$150. The firm's total fixed costs are:

- A) \$5,000.
- B) \$500.
- C) \$.50.
- D) \$50.

Ans: A Level: Moderate Main Topic: 6.4 Short-run production costs Page: 144  
Subtopic: Fixed, variable, and total costs Type: Calculation



## Chapter 6 The organization and costs of production

115. Refer to the data. Total fixed cost is:

Output	Average fixed cost	Average variable cost
1	\$50.00	\$100.00
2	25.00	80.00
3	16.67	66.67
4	12.50	65.00
5	10.00	68.00
6	8.37	73.33
7	6.14	80.00
8	6.25	86.50

- A) \$6.25.
- B) \$100.00.
- C) \$150.00.
- D) \$50.00.

Ans: D Level: Easy Main Topic: 6.4 Short-run production costs Page: 144  
Subtopic: Fixed, variable, and total costs Type: Calculation

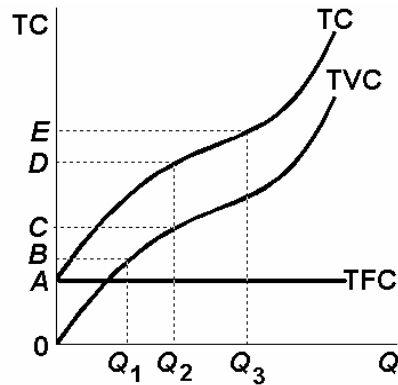
116. At an output level of 50 units per day a firm has average total costs of \$60 and average variable costs of \$35. Its total fixed costs are:

- A) \$925.
- B) \$1,250.
- C) \$1,750.
- D) \$3,000.

Ans: B Level: Moderate Main Topic: 6.4 Short-run production costs Page: 144  
Subtopic: Fixed, variable, and total costs Type: Calculation

## Chapter 6 The organization and costs of production

117. Refer to the graph. Total fixed cost is measured by:



- A) 0B.
- B) AC.
- C) CD.
- D) DE.

Ans: C Level: Easy Main Topic: 6.4 Short-run production costs Page: 144-145  
Subtopic: Fixed, variable, and total costs Type: Graphic

118. Which of the following is incorrect?

- A) Total fixed cost does not change with output in the short run.
- B) Fixed costs exist only in the short run.
- C) Total fixed cost must be added to total variable cost to determine total cost.
- D) Total fixed cost equals total variable cost in the long run.

Ans: D Level: Moderate Main Topic: 6.4 Short-run production costs  
Page: 144-145 Subtopic: Fixed, variable, and total costs Type: Application

119. Which of the following is most likely to be a variable cost?

- A) fuel and power payments
- B) interest on business loans.
- C) rental payments on IBM equipment
- D) real estate taxes

Ans: A Level: Moderate Main Topic: 6.4 Short-run production costs Page: 145  
Subtopic: Fixed, variable, and total costs Type: Application

## Chapter 6 The organization and costs of production

120. If you operated a small bakery, which of the following would be a variable cost in the short run?

- A) baking ovens
- B) interest on business loans
- C) annual lease payment for use of the building
- D) baking supplies (flour, salt, etc.)

Ans: D Level: Easy Main Topic: 6.4 Short-run production costs Page: 145  
Subtopic: Fixed, variable, and total costs Type: Application

121. A firm's total variable cost will depend on:

- A) the prices of variable factors of production.
- B) the production techniques which are used.
- C) the level of output.
- D) all of the above.

Ans: D Level: Easy Main Topic: 6.4 Short-run production costs Page: 145  
Subtopic: Fixed, variable, and total costs Type: Application

122. As output increases, total variable cost:

- A) increases more rapidly than does total cost.
- B) increases continuously at a decreasing rate.
- C) increases at a decreasing rate and then at an increasing rate.
- D) increases at a constant rate.

Ans: C Level: Moderate Main Topic: 6.4 Short-run production costs Page: 145  
Subtopic: Fixed, variable, and total costs Type: Application

123. In comparing the changes in TVC and TC associated with an additional unit of output, we find that:

- A) no generalization about the changes in TC and TVC can be made.
- B) the changes in TC and TVC are equal.
- C) the change in TC is greater than the change in TVC.
- D) the change in TVC is greater than the change in TC.

Ans: B Level: Difficult Main Topic: 6.4 Short-run production costs Page: 145  
Subtopic: Fixed, variable, and total costs Type: Application

## Chapter 6 The organization and costs of production

124. Refer to the data. The total variable cost of producing 5 units:

Output	Total cost
0	\$24
1	33
2	41
3	48
4	54
5	61
6	69

- A) is \$61.
- B) is \$48.
- C) is \$37.
- D) is \$24.

Ans: C Level: Difficult Main Topic: 6.4 Short-run production costs Page: 145  
Subtopic: Fixed, variable, and total costs Type: Calculation

125. Total cost minus total variable cost equals:

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

Ans: B Level: Easy Main Topic: 6.4 Short-run production costs Page: 145  
Subtopic: Fixed, variable, and total costs Type: Application

126. In the short run:

- A) TVC will increase for a time at a diminishing rate, but then beyond some point will increase at an increasing rate.
- B) TVC will increase for a time at an increasing rate, but then beyond some point will increase at a diminishing rate.
- C) TVC will increase by the same absolute amount for each additional unit of output produced.
- D) one cannot generalize concerning the behaviour of TVC as output increases.

Ans: A Level: Moderate Main Topic: 6.4 Short-run production costs Page: 145  
Subtopic: Fixed, variable, and total costs Type: Graphic

## Chapter 6 The organization and costs of production

127. Refer to the data. The total cost of four units of output is:

Output	Average fixed cost fixed	Average variable cost
1	\$50.00	\$100.00
2	25.00	80.00
3	16.67	66.67
4	12.50	65.00
5	10.00	68.00
6	8.37	73.33
7	6.14	80.00
8	6.25	86.50

- A) \$260.
- B) \$76.50.
- C) \$215.
- D) \$310.

Ans: D Level: Easy Main Topic: 6.4 Short-run production costs Page: 145  
Subtopic: Fixed, variable, and total costs Type: Calculation

128. If: TFC = Total Fixed Cost, MC = Marginal Cost, TVC = Total Variable Cost  
Q = Quantity of Output, P = Product Price, the total cost is:

- A) the change in marginal cost.
- B)  $TVC - TFC$
- C)  $TFC + TVC$
- D)  $\frac{TFC + TVC}{Q}$

Ans: C Level: Easy Main Topic: 6.4 Short-run production costs Page: 145  
Subtopic: Fixed, variable, and total costs Type: Formula

Use the following to answer questions 129-131:

<u>Input workers</u>	<u>Output</u>	<u>TFC</u>	<u>TVC</u>	<u>Total cost</u>
0	0	50	0	
1	8	50	40	90
2	20	50	80	
3	28	50	120	170
4	35	50		210
5	41	50	200	250

## Chapter 6 The organization and costs of production

129. Refer to the table above. If output is zero, total cost is:

- A) \$90.
- B) \$50.
- C) \$40.
- D) \$0.

Ans: B Level: Easy Main Topic: 6.4 Short-run production costs Page: 145  
Subtopic: Fixed, variable, and total costs Type: Calculation

130. Refer to the table above. The total cost of producing 20 units of output is:

- A) \$50.
- B) \$80.
- C) \$120.
- D) \$130.

Ans: D Level: Easy Main Topic: 6.4 Short-run production costs Page: 145  
Subtopic: Fixed, variable, and total costs Type: Calculation

131. Refer to the table above. The total variable cost of producing 35 units of output is:

- A) \$90.
- B) \$120.
- C) \$160.
- D) \$210.

Ans: C Level: Moderate Main Topic: 6.4 Short-run production costs Page: 145  
Subtopic: Fixed, variable, and total costs Type: Calculation

132. Refer to the table below. The total cost of five units of output will be:

Output	Total fixed cost	Total variable cost	Average variable cost
\$ 0	\$200	\$ 0	
1	200	50	\$50.00
2	200	90	45.00
3	200	120	40.00
4	200	160	40.00
5	200	220	44.00

- A) \$290.
- B) \$320.
- C) \$420.
- D) \$500.

Ans: C Level: Easy Main Topic: 6.4 Short-run production costs Page: 145  
Subtopic: Fixed, variable, and total costs Type: Calculation

## Chapter 6 The organization and costs of production

133. Because the marginal product of a variable factor of production at first increases and then decreases as the output of the firm is increased:
- A) total cost at first increases at a decreasing rate and then increases at an increasing rate.
  - B) total variable cost at first increases at an increasing rate and then increases at a decreasing rate.
  - C) average total cost at first increases and then diminishes.
  - D) average fixed cost will rise beyond the point of diminishing returns.

Ans: A Level: Difficult Main Topic: 6.4 Short-run production costs Page: 145  
Subtopic: Fixed, variable, and total costs Type: Application

134. Assume a firm closes down in the short run and produces no output. Under these conditions:
- A) TVC is positive, but TFC and TC are zero.
  - B) TFC is positive, but TVC and TC are zero.
  - C) TFC and TC are positive, but TVC is zero.
  - D) TFC, TVC, and TC will all be positive.

Ans: C Level: Moderate Main Topic: 6.4 Short-run production costs Page: 145  
Subtopic: Fixed, variable, and total costs Type: Application

135. Refer to the data. If the firm decided to increase its output from 6 to 7 units, its total costs would rise by:

Output	Average fixed cost	Average variable cost
1	\$50.00	\$100.00
2	25.00	80.00
3	16.67	66.67
4	12.50	65.00
5	10.00	68.00
6	8.37	73.33
7	6.14	80.00
8	6.25	86.50

- A) \$86.14.
- B) \$80.00.
- C) \$6.67.
- D) \$120.00.

Ans: D Level: Moderate Main Topic: 6.4 Short-run production costs Page: 145  
Subtopic: Fixed, variable, and total costs Type: Calculation

## Chapter 6 The organization and costs of production

136. Refer to the following information.

The Sunshine Corporation finds that its costs are \$40 when it produces no output. Its total variable costs (TVC) change with output as shown in the accompanying table.

Output	TVC
1	\$30
2	50
3	65
4	85
5	110

The total cost of producing 3 units of output:

- A) is \$65.
- B) is \$105.
- C) is \$145.
- D) is \$185.

Ans: B Level: Moderate Main Topic: 6.4 Short-run production costs Page: 145  
Subtopic: Fixed, variable, and total costs Type: Calculation

137. At an output of 1,000 units per year, a firm's variable costs are \$5,000 and its average fixed costs are \$3. Its total costs per year are:

- A) \$10,000.
- B) \$8,000.
- C) \$6,000.
- D) \$5,000.

Ans: B Level: Moderate Main Topic: 6.4 Short-run production costs Page: 145  
Subtopic: Fixed, variable, and total costs Type: Calculation



## Chapter 6 The organization and costs of production

138. Refer to the data.

The accompanying table shows average total costs (ATC) for a manufacturing firm whose total fixed costs are \$10:

Output	ATC
1	\$40
2	27
3	29
4	31
5	38

The total cost of producing 4 units of output:

- A) is \$31.
- B) is \$87.
- C) is \$124.
- D) is \$108.

Ans: C Level: Easy Main Topic: 6.4 Short-run production costs Page: 145  
Subtopic: Fixed, variable, and total costs Type: Calculation

139. In the short run the Sure-Screen T-Shirt Company is producing 500 units of output. Its average variable costs are \$2.00 and its average fixed costs are \$.50. The firm's total costs:

- A) are \$2.50.
- B) are \$1250.
- C) are \$750.
- D) are \$1100.

Ans: B Level: Moderate Main Topic: 6.4 Short-run production costs Page: 145  
Subtopic: Fixed, variable, and total costs Type: Calculation

140. If you know that with 8 units of output, average fixed cost is \$12.50 and average variable cost is \$81.25, then total cost at this output level is:

- A) \$93.75.
- B) \$97.78.
- C) \$750.
- D) \$880.

Ans: C Level: Moderate Main Topic: 6.4 Short-run production costs Page: 145  
Subtopic: Fixed, variable, and total costs Type: Application

## Chapter 6 The organization and costs of production

141. Suppose that, when producing 10 units of output, a firm's AVC is \$22, its AFC is \$5, and its MC is \$30. This:
- A) firm's ATC is \$35.
  - B) firm's ATC is \$57.
  - C) firm's total cost is \$270.
  - D) firm's total cost is \$30.

Ans: C Level: Moderate Main Topic: 6.4 Short-run production costs Page: 145  
Subtopic: Fixed, variable, and total costs Type: Calculation

142. Refer to the data.

Output	Average fixed cost	Average variable cost
1	\$50.00	\$100.00
2	25.00	80.00
3	16.67	66.67
4	12.50	65.00
5	10.00	68.00
6	8.37	73.33
7	6.14	80.00
8	6.25	86.50

If the firm closed down and produced zero units of output, its total cost:

- A) would be zero.
- B) would be \$50.
- C) would be \$150.
- D) could not be calculated.

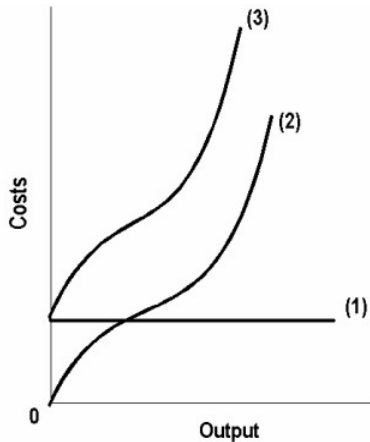
Ans: B Level: Moderate Main Topic: 6.4 Short-run production costs Page: 145  
Subtopic: Fixed, variable, and total costs Type: Calculation

143. In the short run which of the following statements is correct?
- A) The marginal cost curve intersects the average variable and average fixed cost curves at their minimum points.
  - B) Average variable cost declines continuously as total output is expanded.
  - C) Total cost will always exceed variable cost.
  - D) If the inputs of all factors of production are increased by equal amounts, total output will expand by diminishing amounts.

Ans: C Level: Difficult Main Topic: 6.4 Short-run production costs Page: 145  
Subtopic: Fixed, variable, and total costs Type: Application

## Chapter 6 The organization and costs of production

144. In the diagram curves 1, 2, and 3 represent:



- A) average variable cost, marginal cost, and average fixed cost respectively.
- B) total variable cost, total fixed cost, and total cost respectively.
- C) total fixed cost, total variable cost, and total cost respectively.
- D) marginal product, average variable cost, and average total cost respectively.

Ans: C    Level: Easy    Main Topic: 6.4 Short-run production costs    Page: 145  
Subtopic: Fixed, variable, and total costs    Type: Graphic

145. The vertical distance between the total cost and the total variable cost curves differs by an amount which:

- A) initially increases, but then decreases, as output increases.
- B) is constant as output changes.
- C) decreases as output increases.
- D) increases as output increases.

Ans: B    Level: Moderate    Main Topic: 6.4 Short-run production costs    Page: 145  
Subtopic: Fixed, variable, and total costs    Type: Application

146. Average fixed cost:

- A) equals marginal cost when average total cost is at its minimum.
- B) may be found for any output by adding average variable cost and average total cost.
- C) graphs as a U-shaped curve.
- D) declines continually as output increases.

Ans: D    Level: Easy    Main Topic: 6.4 Short-run production costs    Page: 146  
Subtopic: Per-unit, or average costs    Type: Application

## Chapter 6 The organization and costs of production

147. When average fixed costs are falling:

- A) average total cost must be falling.
- B) average variable cost may be either rising or falling.
- C) marginal cost must be falling.
- D) average variable costs must be rising.

Ans: B Level: Difficult Main Topic: 6.4 Short-run production costs Page: 146  
Subtopic: Per-unit, or average costs Type: Application

148. Refer to the data.

Output	Total cost
0	\$24
1	33
2	41
3	48
4	54
5	61
6	69

The average fixed cost of producing 3 units of output:

- A) is \$8.
- B) is \$6.40.
- C) is \$5.50.
- D) is \$6.

Ans: A Level: Difficult Main Topic: 6.4 Short-run production costs Page: 146  
Subtopic: Per-unit, or average costs Type: Calculation

149. Average fixed cost is:

Choice A equal to marginal cost.

Choice B  $\frac{MC}{Q}$

Choice C  $\frac{TFC}{Q}$

Choice D  $\frac{TVC}{Q}$

- A) Choice A
- B) Choice B
- C) Choice C
- D) Choice D

Ans: C Level: Easy Main Topic: 6.4 Short-run production costs Page: 146  
Subtopic: Per-unit, or average costs Type: Formula

## Chapter 6 The organization and costs of production

150. In the short run it is impossible for an expansion of output to increase:

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

Ans: B Level: Moderate Main Topic: 6.4 Short-run production costs Page: 146  
Subtopic: Per-unit, or average costs Type: Application

151. Average fixed costs can be determined graphically by:

- A) summing the marginal costs of any number of units of output and dividing the sum by that output.
- B) the vertical distance between TC and TVC.
- C) the vertical distance between AVC and MC.
- D) the vertical distance between ATC and AVC.

Ans: D Level: Moderate Main Topic: 6.4 Short-run production costs Page: 146  
Subtopic: Per-unit, or average costs Type: Application

152. The vertical distance between a firm's ATC and AVC curves represents:

- A) AFC which increases as output increases.
- B) AFC which decreases as output increases.
- C) marginal costs which decrease as output decreases.
- D) marginal costs which increase as output increases.

Ans: B Level: Moderate Main Topic: 6.4 Short-run production costs Page: 146  
Subtopic: Per-unit, or average costs Type: Application

153. If a profitable firm's fixed costs somehow was zero:

- A) MC and ATC would be equal at all levels of output.
- B) AFC would become negative as output increases.
- C) AVC and ATC would coincide.
- D) ATC would be zero at all output levels.

Ans: C Level: Easy Main Topic: 6.4 Short-run production costs Page: 146  
Subtopic: Per-unit, or average costs Type: Application

## Chapter 6 The organization and costs of production

154. Refer to the information.

The Sunshine Corporation finds that its costs are \$40 when it produces no output. Its total variable costs (TVC) change with output as shown in the accompanying table.

Output	TVC
1	\$30
2	50
3	65
4	85
5	110

The average fixed cost of 3 units of output:

- A) is \$13.33.
- B) is \$12.50.
- C) is \$40.
- D) is \$18.50.

Ans: A Level: Easy Main Topic: 6.4 Short-run production costs Page: 146  
Subtopic: Per-unit, or average costs Type: Calculation

155. Refer to the table.

Output	Total fixed cost	Total variable cost	Average variable cost
\$ 0	\$200	\$ 0	
1	200	50	\$50.00
2	200	90	45.00
3	200	120	40.00
4	200	160	40.00
5	200	220	44.00

The average fixed cost of four units of output will be:

- A) \$40.00.
- B) \$50.00.
- C) \$66.67.
- D) \$100.00.

Ans: B Level: Easy Main Topic: 6.4 Short-run production costs Page: 146  
Subtopic: Per-unit, or average costs Type: Calculation

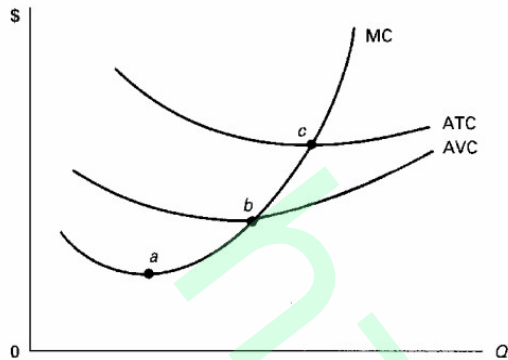
## Chapter 6 The organization and costs of production

156. Which of the following curves is not U-shaped?

- A) MC
- B) AFC
- C) AVC
- D) ATC

Ans: B Level: Easy Main Topic: 6.4 Short-run production costs Page: 146  
Subtopic: Per-unit, or average costs Type: Application

157. Refer to the diagram.



This firm's average fixed costs are:

- A) not shown.
- B) the vertical distance between AVC and MC.
- C) the vertical distance between AVC and ATC.
- D) equal to the per unit change in MC.

Ans: C Level: Moderate Main Topic: 6.4 Short-run production costs Page: 146  
Subtopic: Per-unit, or average costs Type: Graphic

## Chapter 6 The organization and costs of production

158. Refer to the data.

The accompanying table shows average total costs (ATC) for a manufacturing firm whose total fixed costs are \$10:

Output	ATC
1	\$40
2	27
3	29
4	31
5	38

The average variable cost of 4 units of output:

- A) is \$33.50.
- B) is \$28.50.
- C) is \$19.00.
- D) is \$21.00.

Ans: B Level: Moderate Main Topic: 6.4 Short-run production costs Page: 146  
Subtopic: Per-unit, or average costs Type: Calculation

159. The following cost data are for a firm in the short run:

Output	Total cost
0	\$400
1	500
2	550
3	600
4	650
5	700

What is the firm's average variable cost at an output of 5 units?

- A) \$30
- B) \$60
- C) \$120
- D) \$140

Ans: B Level: Difficult Main Topic: 6.4 Short-run production costs Page: 146  
Subtopic: Per-unit, or average costs Type: Calculation



## Chapter 6 The organization and costs of production

160. If the total variable cost of 9 units of output is \$90 and the total variable cost of 10 units of output is \$120, then:
- A) the average variable cost of 10 units is \$10.
  - B) the average variable cost of 9 units is \$10.
  - C) the marginal cost of the tenth unit is \$90.
  - D) the firm is operating in the range of increasing marginal returns.

Ans: B Level: Moderate Main Topic: 6.4 Short-run production costs Page: 146  
Subtopic: Per-unit, or average costs Type: Application

161. If you know that total fixed cost is \$200, total variable cost is \$600, and total product is 4 units, then:
- A) marginal cost is \$50.
  - B) average fixed cost is \$100.
  - C) average total cost is \$100.
  - D) average variable cost is \$150.

Ans: D Level: Moderate Main Topic: 6.4 Short-run production costs Page: 146  
Subtopic: Per-unit, or average costs Type: Calculation

162. Refer to the table and information.  
The fixed cost of the firm is \$500. The firm's total variable cost is indicated in the table.

Output	Total variable cost
1	\$400
2	720
3	1000
4	1400
5	2000
6	3600

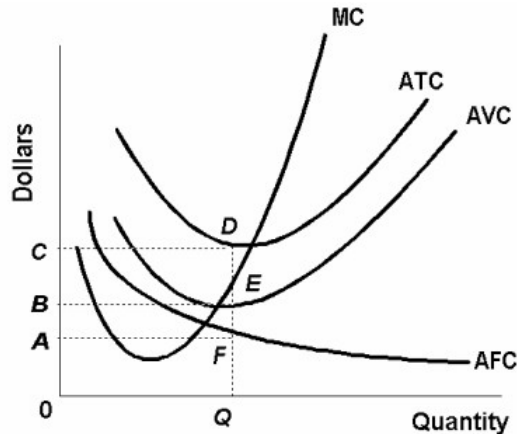
The average variable cost of the firm when 5 units of output are produced is:

- A) \$100.
- B) \$200.
- C) \$300.
- D) \$400.

Ans: D Level: Moderate Main Topic: 6.4 Short-run production costs Page: 146  
Subtopic: Per-unit, or average costs Type: Calculation

## Chapter 6 The organization and costs of production

Use the following to answer questions 163-167:



163. Refer to the diagram above. At output level Q average fixed cost:
- A) is equal to EF.
  - B) is equal to QE.
  - C) is measured by both QF and ED.
  - D) cannot be determined from the information given.

Ans: C    Level: Difficult    Main Topic: 6.4 Short-run production costs    Page: 146  
Subtopic: Per-unit, or average costs    Type: Graphic

164. Refer to the diagram above. The vertical distance between ATC and AVC reflects:
- A) the law of diminishing returns.
  - B) the average fixed cost at each level of output.
  - C) marginal cost at each level of output.
  - D) the presence of economies of scale.

Ans: B    Level: Moderate    Main Topic: 6.4 Short-run production costs    Page: 146  
Subtopic: Per-unit, or average costs    Type: Graphic

165. Refer to the diagram above. At output level Q total variable cost is:
- A) 0BEQ.
  - B) BCDE.
  - C) 0CDQ.
  - D) 0AFQ.

Ans: A    Level: Difficult    Main Topic: 6.4 Short-run production costs    Page: 146  
Subtopic: Per-unit, or average costs    Type: Graphic

## Chapter 6 The organization and costs of production

166. Refer to the diagram above. At output level Q total fixed cost is:

- A) 0BEQ.
- B) BCDE.
- C) 0BEQ-0AFQ.
- D) 0CDQ.

Ans: B Level: Difficult Main Topic: 6.4 Short-run production costs Page: 146  
Subtopic: Per-unit, or average costs Type: Graphic

167. Refer to the diagram above. At output level Q total cost is:

- A) 0BEQ.
- B) BCDE.
- C) 0BEQ plus BCDE.
- D) 0AFQ plus BCDE.

Ans: C Level: Difficult Main Topic: 6.4 Short-run production costs Page: 146  
Subtopic: Per-unit, or average costs Type: Graphic

Use the following to answer question 168:

Refer to this information: TFC = Total Fixed Cost, MC = Marginal Cost,  
TVC = Total Variable Cost, Q = Quantity of Output, P = Product Price,

168. Average total cost is:

- A) equal to marginal cost.
- B)  $\frac{TVC - TFC}{Q}$
- C)  $\frac{TVC}{Q}$
- D)  $\frac{TFC + TVC}{Q}$
- A) Choice A
- B) Choice B
- C) Choice C
- D) Choice D

Ans: D Level: Easy Main Topic: 6.4 Short-run production costs Page: 147  
Subtopic: Per-unit, or average costs Type: Formula

## Chapter 6 The organization and costs of production

169. A firm has total fixed costs of \$8,000 a year. The average variable cost is \$5.00 for 2,000 units of output. At this level of output, its average total costs are:

- A) \$4.
- B) \$5.
- C) \$7.
- D) \$9.

Ans: D Level: Easy Main Topic: 6.4 Short-run production costs Page: 147  
Subtopic: Per-unit, or average costs Type: Calculation

170. The average total cost of five units of output:

Refer to the data.

Output	Average fixed cost	Average variable cost
1	\$50.00	\$100.00
2	25.00	80.00
3	16.67	66.67
4	12.50	65.00
5	10.00	68.00
6	8.33	73.33
7	6.14	80.00
8	6.25	86.50

- A) is \$69.
- B) is \$78.
- C) is \$3.
- D) cannot be determined from the information given.

Ans: B Level: Easy Main Topic: 6.4 Short-run production costs Page: 147  
Subtopic: Per-unit, or average costs Type: Calculation

## Chapter 6 The organization and costs of production

171. Refer to the table. The average total cost of producing 35 units of output is:

Input workers	Output	TFC	TVC	Total cost
0	0	50	0	
1	8	50	40	90
2	20	50	80	
3	28	50	120	170
4	35	50		210
5	41	50	200	250

- A) \$1.41.
- B) \$4.57.
- C) \$6.00.
- D) \$7.00.

Ans: C Level: Easy Main Topic: 6.4 Short-run production costs Page: 147  
Subtopic: Per-unit, or average costs Type: Calculation

172. Refer to the table and information. The fixed cost of the firm is \$500. The firm's total variable cost is indicated in the table. The average total cost of the firm when 3 units of output are being produced is:

Output	Total variable cost
1	\$400
2	720
3	1000
4	1400
5	2000
6	3600

- A) \$350.
- B) \$400.
- C) \$500.
- D) \$700.

Ans: C Level: Moderate Main Topic: 6.4 Short-run production costs Page: 147  
Subtopic: Per-unit, or average costs Type: Calculation

## Chapter 6 The organization and costs of production

173. Refer to the table.

<b>Output</b>	<b>Total fixed cost</b>	<b>Total variable cost</b>	<b>Average variable cost</b>
\$ 0	\$200	\$ 0	
1	200	50	\$50.00
2	200	90	45.00
3	200	120	40.00
4	200	160	40.00
5	200	220	44.00

The average total cost of two units of output will be:

- A) \$90.00.
- B) \$106.67.
- C) \$145.00.
- D) \$250.00.

Ans: C Level: Easy Main Topic: 6.4 Short-run production costs Page: 147  
Subtopic: Per-unit, or average costs Type: Calculation

174. Refer to the data.

<u>Output</u>	<u>Total cost</u>
0	\$24
1	33
2	41
3	48
4	54
5	61
6	69

The average total cost of producing 3 units of output:

- A) is \$14.
- B) is \$12.
- C) is \$13.50.
- D) is \$16.

Ans: D Level: Moderate Main Topic: 6.4 Short-run production costs Page: 147  
Subtopic: Per-unit, or average costs Type: Calculation

## Chapter 6 The organization and costs of production

175. For most producing firms:

- A) marginal cost rises as output is carried to a certain level, and then begins to decline.
- B) total costs rise as output is carried to a certain level, and then begin to decline.
- C) average total costs decline as output is carried to a certain level, and then begin to rise.
- D) average total costs rise as output is carried to a certain level, and then begin to decline.

Ans: C Level: Moderate Main Topic: 6.4 Short-run production costs Page: 147  
Subtopic: Per-unit, or average costs Type: Application

176. If one knows total costs for all levels of output, including zero output, it is possible to calculate:

- A) average fixed cost.
- B) average variable cost.
- C) average total cost.
- D) all of the above.

Ans: D Level: Difficult Main Topic: 6.4 Short-run production costs Page: 147  
Subtopic: Per-unit, or average costs Type: Application

177. A firm has fixed costs of \$5,000. Its average variable cost is \$2.00. At an output of 5,000 units its average total cost is:

- A) \$2.50.
- B) \$3.00.
- C) \$3.50.
- D) \$4.00.

Ans: B Level: Moderate Main Topic: 6.4 Short-run production costs Page: 147  
Subtopic: Per-unit, or average costs Type: Calculation

178. With fixed costs of \$400, a firm has average total costs of \$3 and average variable costs of \$2.50. Its output is:

- A) 200 units.
- B) 400 units.
- C) 800 units.
- D) 1,600 units.

Ans: C Level: Moderate Main Topic: 6.4 Short-run production costs Page: 147  
Subtopic: Per-unit, or average costs Type: Calculation

## Chapter 6 The organization and costs of production

179. Marginal cost is the:

- A) rate of change in total fixed cost which results from producing one more unit of output.
- B) change in total cost which results from producing one more unit of output.
- C) change in average variable cost which results from producing one more unit of output.
- D) change in average total cost which results from producing one more unit of output.

Ans: B Level: Easy Main Topic: 6.4 Short-run production costs Page: 147  
Subtopic: Marginal cost Type: Definition

180. Which of the following statements is correct?

- A) Average total cost is the difference between average variable cost and average fixed cost.
- B) Marginal cost measures the cost per unit of output associated with any level of production.
- C) When marginal product rises, marginal cost must also rise.
- D) Marginal cost is the price or cost of an extra variable input (for example, an additional worker) divided by its marginal product.

Ans: D Level: Moderate Main Topic: 6.4 Short-run production costs Page: 147  
Subtopic: Marginal cost Type: Definition

181. Refer to the data.

Output	Total cost
0	\$24
1	33
2	41
3	48
4	54
5	61
6	69

The marginal cost of producing the sixth unit of output:

- A) is \$24.
- B) is \$12.
- C) is \$16.
- D) is \$8.

Ans: D Level: Moderate Main Topic: 6.4 Short-run production costs Page: 147  
Subtopic: Marginal cost Type: Calculation



## Chapter 6 The organization and costs of production

182. Refer to the information below.

TFC = Total Fixed Cost, MC = Marginal Cost,  
TVC = Total Variable Cost, Q = Quantity of Output, P = Product Price,

Marginal cost is:

Choice A  $\frac{\Delta \text{TVC}}{Q}$

Choice B  $\frac{\Delta \text{TVC}}{\Delta Q}$

Choice C  $\frac{P - Q}{\Delta Q}$

Choice D  $\frac{\Delta \text{TFC}}{\Delta Q}$

A) Choice A

B) Choice B

C) Choice C

D) Choice D

Ans: B Level: Easy Main Topic: 6.4 Short-run production costs Page: 147

Subtopic: Marginal cost Type: Formula

183. If a firm wanted to know how much it would save by producing one less unit of output, it would look to:

A) MC.

B) ATC.

C) AVC.

D) AFC.

Ans: A Level: Easy Main Topic: 6.4 Short-run production costs Page: 147

Subtopic: Marginal cost Type: Application

184. In comparing the changes in TC and TVC associated with an additional unit of output, we find that:

A) the change in TVC is equal to MC, while the change in TC is equal to TFC.

B) the change in TC exceeds the change in TVC.

C) the change in TVC exceeds the change in TC.

D) both are equal to MC.

Ans: D Level: Moderate Main Topic: 6.4 Short-run production costs Page: 147

Subtopic: Marginal cost Type: Application

## Chapter 6 The organization and costs of production

185. Refer to the data.

Output	Average fixed cost	Average variable cost
1	\$50.00	\$100.00
2	25.00	80.00
3	16.67	66.67
4	12.50	65.00
5	10.00	68.00
6	8.37	73.33
7	6.14	80.00
8	6.25	86.50

The marginal cost of the fifth unit of output:

- A) is \$3.
- B) is \$62.
- C) is \$80.
- D) cannot be determined from the information given.

Ans: C Level: Moderate Main Topic: 6.4 Short-run production costs Page: 147  
Subtopic: Marginal cost Type: Calculation

186. Refer to the table.

Input workers	Output	TFC	TVC	Total cost
0	0	50	0	
1	8	50	40	90
2	20	50	80	
3	28	50	120	170
4	35	50		210
5	41	50	200	250

When output increases from 28 to 35 units, the marginal cost of the product is:

- A) \$4.44.
- B) \$5.71.
- C) \$6.00.
- D) \$6.67.

Ans: B Level: Moderate Main Topic: 6.4 Short-run production costs Page: 147  
Subtopic: Marginal cost Type: Calculation

## Chapter 6 The organization and costs of production

187. Refer to the information. The Sunshine Corporation finds that its costs are \$40 when it produces no output. Its total variable costs (TVC) change with output as shown in the accompanying table.

Output	TVC
1	\$30
2	50
3	65
4	85
5	110

The marginal cost of the third unit of output:

- A) is \$105.
- B) is \$25.
- C) is \$15.
- D) is \$20.

Ans: C Level: Easy Main Topic: 6.4 Short-run production costs Page: 147  
Subtopic: Marginal cost Type: Calculation

188. Refer to the data.

The accompanying table shows average total costs (ATC) for a manufacturing firm whose total fixed costs are \$10:

Output	ATC
1	\$40
2	27
3	29
4	31
5	38

The marginal cost of the fourth unit of output:

- A) is \$2.
- B) is \$12.
- C) is \$37.
- D) is \$16.

Ans: C Level: Moderate Main Topic: 6.4 Short-run production costs Page: 147  
Subtopic: Marginal cost Type: Calculation

## Chapter 6 The organization and costs of production

189. Refer to the below table and information

The fixed cost of the firm is \$500. The firm's total variable cost is indicated in the table.

<b>Output</b>	<b>Total variable cost</b>
1	\$400
2	720
3	1000
4	1400
5	2000
6	3600

The marginal cost of the sixth unit of output is:

- A) \$400.
- B) \$600.
- C) \$1400.
- D) \$1600.

Ans: D Level: Moderate Main Topic: 6.4 Short-run production costs Page: 147  
Subtopic: Marginal cost Type: Calculation

190. Refer to the table.

<b>Output</b>	<b>Total fixed cost</b>	<b>Total variable cost</b>	<b>Average variable cost</b>
\$ 0	\$200	\$ 0	
1	200	50	\$50.00
2	200	90	45.00
3	200	120	40.00
4	200	160	40.00
5	200	220	44.00

The marginal cost of the third unit of output is:

- A) \$30.
- B) \$40.
- C) \$45.
- D) \$50.

Ans: A Level: Easy Main Topic: 6.4 Short-run production costs Page: 147  
Subtopic: Marginal cost Type: Calculation

## Chapter 6 The organization and costs of production

191. The following table shows the relationship between output and costs for two firms in the short run.

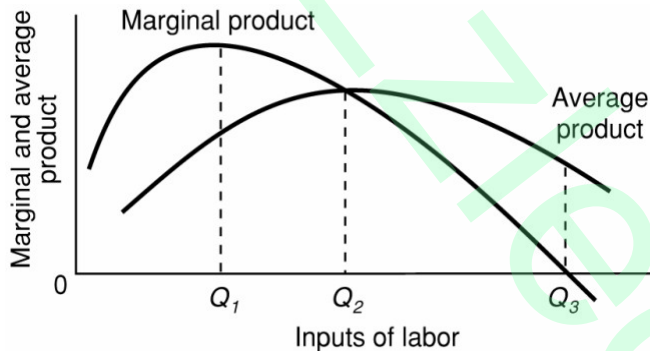
Output	Total cost firm A	Total cost firm B
0	\$ 500	\$ 800
1	1,000	1,200
2	1,600	1,500
3	2,300	1,800
4	2,900	2,200
5	3,800	2,700

Which of the following is correct?

- A) A has greater fixed costs than B.
- B) A has higher unit costs than B at low levels of output.
- C) A has greater marginal costs than B at each level of output.
- D) A experiences diminishing returns throughout the range of production.

Ans: C Level: Moderate Main Topic: 6.4 Short-run production costs Page: 147  
Subtopic: Marginal cost Type: Calculation

Use the following to answer questions 192-193:



192. Refer to the diagram above, where variable inputs of labour are being added to a constant amount of property factors of production. Marginal cost will be at a minimum for this firm when it is hiring:

- A)  $Q_3$  workers.
- B)  $Q_2$  workers.
- C)  $Q_1$  workers.
- D) more than  $Q_3$  workers.

Ans: C Level: Difficult Main Topic: 6.4 Short-run production costs Page: 149  
Subtopic: Marginal cost Type: Graphic

## Chapter 6 The organization and costs of production

193. Refer to the diagram above, where variable inputs of labour are being added to a constant amount of property factors of production. Average variable cost will be at a minimum when the firm is hiring:

- A)  $Q_3$  workers.
- B)  $Q_2$  workers.
- C)  $Q_1$  workers.
- D) more than  $Q^3$  workers.

Ans: B Level: Difficult Main Topic: 6.4 Short-run production costs Page: 149  
Subtopic: Marginal cost Type: Graphic

194. Which of the following is correct?

- A) There is no relationship between MP and MC.
- B) When AP is rising MC is falling, and when AP is falling MC is rising.
- C) When MP is rising MC is rising, and when MP is falling MC is falling.
- D) When MP is rising MC is falling, and when MP is falling MC is rising.

Ans: D Level: Difficult Main Topic: 6.4 Short-run production costs  
Page: 149-150 Subtopic: Marginal cost Type: Application

195. Which of the following holds true?

- A) There is no relationship between AP and AVC.
- B) When MP is rising AVC is falling, and when MP is falling AVC is rising.
- C) When AP is rising AVC is falling, and when AP is falling AVC is rising.
- D) When AP is rising AVC is rising, and when AP is falling AVC is falling.

Ans: C Level: Difficult Main Topic: 6.4 Short-run production costs  
Page: 149-150 Subtopic: Marginal cost Type: Application

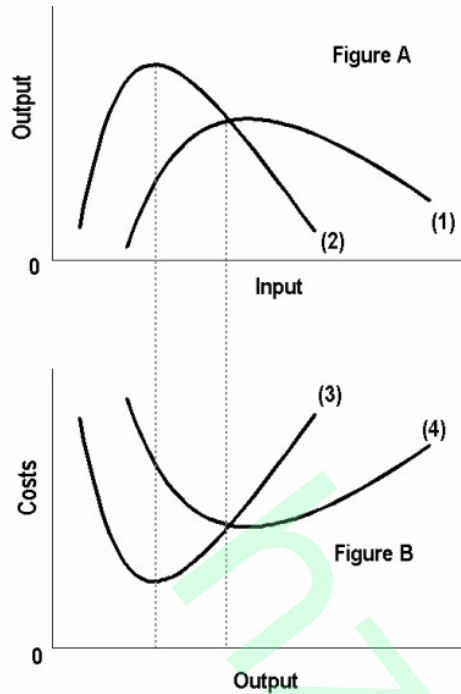
196. The range over which average variable cost is increasing is the same as the range over which:

- A) marginal cost is decreasing.
- B) average fixed cost is increasing.
- C) average product is increasing.
- D) average product is decreasing.

Ans: D Level: Moderate Main Topic: 6.4 Short-run production costs  
Page: 149-150 Subtopic: Marginal cost Type: Application

## Chapter 6 The organization and costs of production

Use the following to answer questions 197-200:



197. Refer to the short-run production and cost data. In Figure A curve (1) is:
- A) total product and curve (2) is average product.
  - B) total product and curve (2) is marginal product.
  - C) average product and curve (2) is marginal product.
  - D) marginal product and curve (2) is average product.

Ans: C Level: Moderate Main Topic: 6.4 Short-run production costs  
Page: 149-150 Subtopic: Marginal cost Type: Graphic

198. Refer to the short-run production and cost data. In Figure B curve (3) is:
- A) AVC and curve (4) is MC.
  - B) MC and curve (4) is AVC.
  - C) MC and curve (4) is AFC.
  - D) AFC and curve (4) is MC.

Ans: B Level: Moderate Main Topic: 6.4 Short-run production costs  
Page: 149-150 Subtopic: Marginal cost Type: Graphic

## Chapter 6 The organization and costs of production

199. Refer to the short-run production and cost data above. The curves of Figures A and B suggest that:
- A) marginal product and marginal cost reach their maximum points at the same output.
  - B) marginal cost reaches a minimum where marginal product is at its maximum.
  - C) marginal cost and marginal product reach their minimum points at the same output.
  - D) AVC cuts MC at the latter's minimum point.

Ans: B Level: Moderate Main Topic: 6.4 Short-run production costs  
Page: 149-150 Subtopic: Marginal cost Type: Graphic

200. Refer to the short-run production and cost data above. The curves of Figures A and B suggest that:
- A) average product and average variable cost reach their maximum points at the same output.
  - B) AVC cuts MC at the latter's maximum point.
  - C) AVC reaches a minimum where AP is at its maximum.
  - D) AFC declines so long as output increases.

Ans: C Level: Moderate Main Topic: 6.4 Short-run production costs  
Page: 149-150 Subtopic: Marginal cost Type: Graphic

201. Which of the following is correct?
- A) When AP is rising, AVC is rising.
  - B) When AP is rising, AVC is falling.
  - C) When AP is rising, AP exceeds MP.
  - D) There is no relationship between AP and AVC.

Ans: B Level: Difficult Main Topic: 6.4 Short-run production costs  
Page: 149-150 Subtopic: Marginal cost Type: Graphic

202. The short-run average total cost curve is U-shaped because:
- A) average fixed costs decline continuously as output increases.
  - B) of increasing and diminishing returns.
  - C) of economies and diseconomies of scale.
  - D) minimum efficient scale is encountered.

Ans: B Level: Difficult Main Topic: 6.4 Short-run production costs  
Page: 149-150 Subtopic: Marginal cost Type: Application



## Chapter 6 The organization and costs of production

203. The following cost data are for a firm operating in the short run.

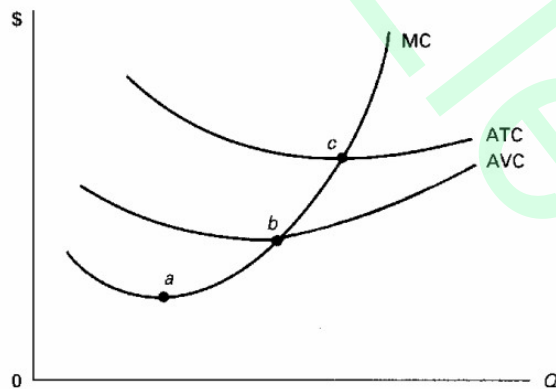
Output	Total cost
0	\$ 400
1	900
2	1,300
3	1,600
4	2,000
5	2,500
6	3,100

Other things equal, diminishing returns begin to set in with the production of which unit of output?

- A) 2
- B) 3
- C) 4
- D) 5

Ans: C Level: Difficult Main Topic: 6.4 Short-run production costs  
Page: 149-150 Subtopic: Marginal cost Type: Calculation

204. Refer to the diagram. If labour is the only variable input, the average product of labour is at a:

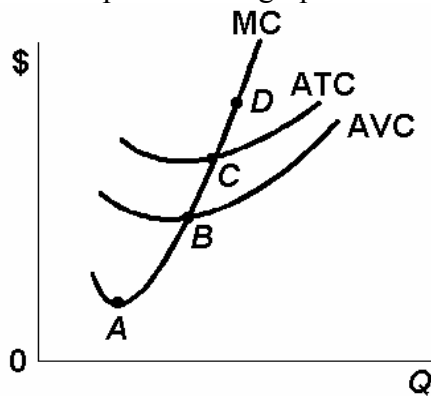


- A) minimum at point b.
- B) maximum at point b.
- C) maximum at point a.
- D) maximum at point c.

Ans: B Level: Difficult Main Topic: 6.4 Short-run production costs  
Page: 149-150 Subtopic: Marginal cost Type: Graphic

## Chapter 6 The organization and costs of production

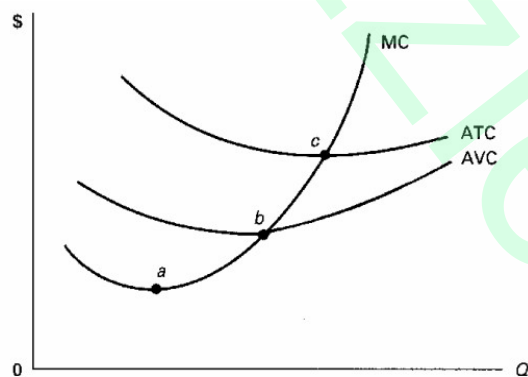
205. At which point of the graph is the MP the greatest?



- A) point A
- B) point B
- C) point C
- D) point D

Ans: A Level: Difficult Main Topic: 6.4 Short-run production costs  
Page: 149-150 Subtopic: Marginal cost Type: Graphic

206. Refer to the diagram. If labour is the only variable input, the marginal product of labour is at a:



- A) maximum at point a.
- B) minimum at point a.
- C) maximum at point b.
- D) maximum at point c.

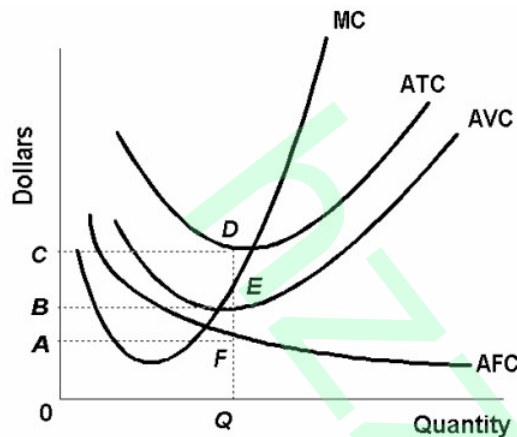
Ans: A Level: Easy Main Topic: 6.4 Short-run production costs Page: 149-150  
Subtopic: Marginal cost Type: Graphic

## Chapter 6 The organization and costs of production

207. The reason the marginal cost curve eventually increases as output increases for the typical firm is because:
- A) of diseconomies of scale.
  - B) of minimum efficient scale.
  - C) of the law of diminishing returns.
  - D) normal profit exceeds economic profit.

Ans: C Level: Moderate Main Topic: 6.4 Short-run production costs  
Page: 149-150 Subtopic: Marginal cost Type: Application

208. Refer to the diagram. At output level Q:



- A) marginal product is falling.
- B) marginal product is rising.
- C) marginal product is negative.
- D) one cannot determine whether marginal product is falling or rising.

Ans: A Level: Difficult Main Topic: 6.4 Short-run production costs  
Page: 149-150 Subtopic: Marginal cost Type: Graphic

209. Which of the following is correct as it relates to cost curves?
- A) Average variable cost intersects marginal cost at the latter's minimum point.
  - B) Marginal cost intersects average total cost at the latter's minimum point.
  - C) Average fixed cost intersects marginal cost at the latter's minimum point.
  - D) Marginal cost intersects average fixed cost at the latter's minimum point.

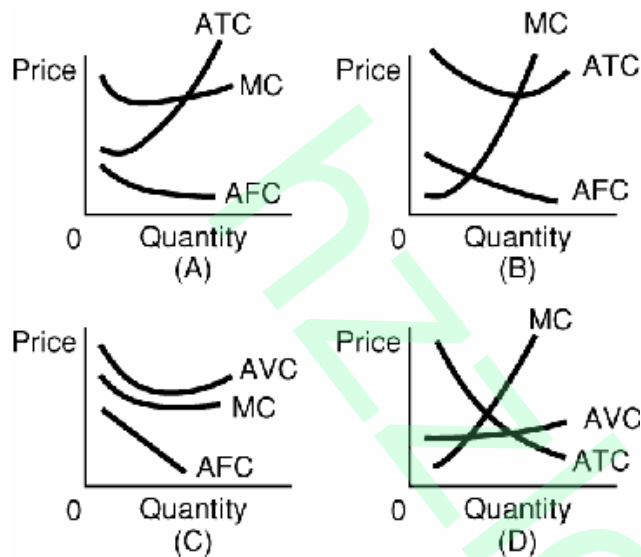
Ans: B Level: Moderate Main Topic: 6.4 Short-run production costs  
Page: 150 Subtopic: Marginal cost Type: Application

## Chapter 6 The organization and costs of production

210. Assume a firm is operating at minimum average total cost in the short run. If there is a decrease in output it follows that:
- A) marginal cost increases.
  - B) average fixed cost increases.
  - C) average total costs decrease.
  - D) average variable cost increases.

Ans: B Level: Difficult Main Topic: 6.4 Short-run production costs  
Page: 150 Subtopic: Marginal cost Type: Application

211. Which of the graphs is correct?



- A) A
- B) B
- C) C
- D) D

Ans: B Level: Difficult Main Topic: 6.4 Short-run production costs  
Page: 150 Subtopic: Marginal cost Type: Graphic

212. The relationship between marginal cost and average fixed cost is such that:
- A) declines in MC cause AFC to decline as output increases.
  - B) increases in MC cause AFC to increase as output increases.
  - C) MC intersects AFC at that output where AFC is at a minimum.
  - D) none of the above are true.

Ans: D Level: Moderate Main Topic: 6.4 Short-run production costs  
Page: 150 Subtopic: Marginal cost Type: Application

## Chapter 6 The organization and costs of production

213. Marginal cost:

- A) equals both average variable cost and average total cost at their respective minimums.
- B) is the difference between total cost and total variable cost.
- C) rises for a time, but then begins to decline when diminishing returns set in.
- D) declines continuously as output increases.

Ans: A Level: Difficult Main Topic: 6.4 Short-run production costs  
Page: 150 Subtopic: Marginal cost Type: Application

214. If average total cost is declining, then:

- A) marginal cost must be greater than average total cost.
- B) the average fixed cost curve must lie above the average variable cost curve.
- C) marginal cost must be less than average total cost.
- D) total cost must also be declining.

Ans: C Level: Difficult Main Topic: 6.4 Short-run production costs  
Page: 150 Subtopic: Marginal cost Type: Application

215. The relationship between the marginal cost and the average total cost schedule is such that:

- A) the behaviour of one schedule does not affect the other.
- B) if ATC exceeds MC, MC must be rising.
- C) if MC is declining, ATC may be either declining or rising.
- D) if MC is declining, ATC must also be declining.

Ans: D Level: Difficult Main Topic: 6.4 Short-run production costs  
Page: 150 Subtopic: Marginal cost Type: Application

216. If marginal cost is:

- A) falling, then average total cost must also be falling.
- B) rising, then average total cost must also be rising.
- C) rising, then average total cost could be either falling or rising.
- D) falling, then average total cost could be either falling or rising.

Ans: C Level: Difficult Main Topic: 6.4 Short-run production costs  
Page: 150 Subtopic: Marginal cost Type: Application

## Chapter 6 The organization and costs of production

217. If marginal cost is below average variable cost:

- A) average total cost is increasing but average variable cost is decreasing.
- B) both average total cost and average variable cost are decreasing.
- C) both average total cost and average variable cost are increasing.
- D) average variable cost is less than average fixed cost.

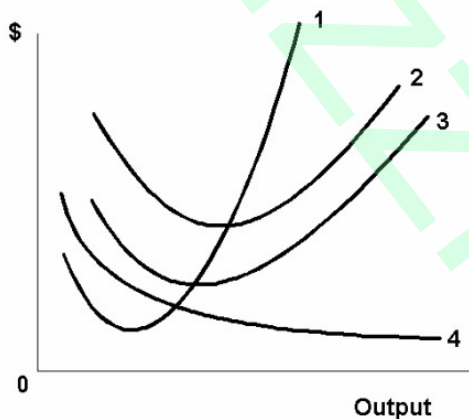
Ans: B Level: Difficult Main Topic: 6.4 Short-run production costs  
Page: 150 Subtopic: Marginal cost Type: Application

218. If marginal cost exceeds average variable cost, then:

- A) average variable cost must be increasing.
- B) average total cost must be increasing.
- C) average fixed costs must be increasing.
- D) marginal cost must be decreasing.

Ans: A Level: Difficult Main Topic: 6.4 Short-run production costs Page: 150  
Subtopic: Marginal cost Type: Application

219. In the figure, curves 1, 2, 3, and 4 represent the:



- A) ATC, MC, AFC, and AVC curves respectively.
- B) AFC, MC, AVC, and ATC curves respectively.
- C) MC, ATC, AVC, and AFC curves respectively.
- D) ATC, AVC, AFC, and MC curves respectively.

Ans: C Level: Moderate Main Topic: 6.4 Short-run production costs  
Page: 150 Subtopic: Marginal cost Type: Graphic

## Chapter 6 The organization and costs of production

220. Refer to the data below.

Output	Average fixed cost	Average variable cost
1	\$50.00	\$100.00
2	25.00	80.00
3	16.67	66.67
4	12.50	65.00
5	10.00	68.00
6	8.37	73.33
7	6.14	80.00
8	6.25	86.50

The marginal cost curve would intersect the average variable cost curve at about:

- A) 2 units of output.
- B) 4 units of output.
- C) 6 units of output.
- D) 7 units of output.

Ans: B Level: Difficult Main Topic: 6.4 Short-run production costs Page: 150  
Subtopic: Marginal cost Type: Calculation

221. If the short-run average variable cost of production for a firm is decreasing, then it follows that:

- A) average variable cost must be above average fixed cost.
- B) marginal cost must be below average variable cost.
- C) average fixed cost must be constant.
- D) marginal cost must be decreasing.

Ans: B Level: Difficult Main Topic: 6.4 Short-run production costs Page: 150  
Subtopic: Marginal cost Type: Application

## Chapter 6 The organization and costs of production

222. The following data show the relationship between total costs and output in the short run.

Output	Total cost
0	\$ 5
1	8
2	12
3	15
4	20
5	27

The firm's marginal costs are equal to average total cost somewhere between units:

- A) 1 and 2.
- B) 2 and 3.
- C) 3 and 4.
- D) 4 and 5.

Ans: C Level: Difficult Main Topic: 6.4 Short-run production costs Page: 150  
Subtopic: Marginal cost Type: Calculation

223. Over the range of output where the slope of the short-run total cost curve becomes steeper:

- A) fixed costs are increasing.
- B) marginal cost is increasing.
- C) marginal cost is positive, but could be increasing or decreasing.
- D) marginal cost is necessarily greater than average variable cost.

Ans: B Level: Difficult Main Topic: 6.4 Short-run production costs Page: 150  
Subtopic: Marginal cost Type: Application

224. At the level of output where marginal cost equals average variable cost:

- A) average total cost is decreasing.
- B) average variable cost is decreasing.
- C) marginal cost equals average total cost.
- D) marginal cost is decreasing.

Ans: A Level: Difficult Main Topic: 6.4 Short-run production costs Page: 150  
Subtopic: Marginal cost Type: Application



## Chapter 6 The organization and costs of production

225. Other things equal, if the prices of a firm's variable inputs were to fall:
- A) one could not predict how unit costs of production would be affected.
  - B) marginal cost, average variable cost, and average fixed cost would all fall.
  - C) marginal cost, average variable cost, and average total cost would all fall.
  - D) average variable cost would fall, but marginal cost would be unchanged.

Ans: C Level: Moderate Main Topic: 6.4 Short-run production costs Page: 150  
Subtopic: Shifts of cost curves Type: Application

226. Other things equal, if the fixed costs of a firm were to increase by \$100,000 per year, which of the following would happen?
- A) Marginal costs and average variable costs would both rise.
  - B) Average fixed costs and average variable costs would rise.
  - C) Average fixed costs and average total costs would rise.
  - D) Average fixed costs would rise, but marginal costs would fall.

Ans: C Level: Moderate Main Topic: 6.4 Short-run production costs Page: 150  
Subtopic: Shifts of cost curves Type: Application

227. If a technological advance reduces the amount of variable factors of production needed to produce any level of output, then:
- A) the AVC curve will shift downward.
  - B) the MC curve will shift downward.
  - C) the ATC curve will shift downward.
  - D) all of the above.

Ans: D Level: Moderate Main Topic: 6.4 Short-run production costs Page: 150  
Subtopic: Shifts of cost curves Type: Application

228. Other things equal, if the wage rates paid to a firm's labour inputs were to rise, we would expect the:
- A) AFC, AVC, ATC, and MC curves all to rise.
  - B) AVC, ATC, and MC curves all to rise.
  - C) AFC and ATC curves to fall.
  - D) MP curve to fall.

Ans: B Level: Easy Main Topic: 6.4 Short-run production costs Page: 150  
Subtopic: Shifts of cost curves Type: Application

## Chapter 6 The organization and costs of production

229. If a technological advance increases a firm's labour productivity, we would expect its:

- A) average total cost curve to rise.
- B) average total cost curve to fall.
- C) total cost curve to rise.
- D) average total cost curve to be unaffected.

Ans: B Level: Easy Main Topic: 6.4 Short-run production costs Page: 150  
Subtopic: Shifts of cost curves Type: Application

230. If the price of labour or some other variable factor of production decreased, the:

- A) AVC curve would shift upward.
- B) AFC curve would shift downward.
- C) AFC curve would shift upward.
- D) MC curve would shift downward.

Ans: D Level: Moderate Main Topic: 6.4 Short-run production costs Page: 150  
Subtopic: Shifts of cost curves Type: Application

231. In the long run:

- A) all costs are variable costs.
- B) all costs are fixed costs.
- C) variable costs equal fixed costs.
- D) fixed costs are greater than variable costs.

Ans: A Level: Easy Main Topic: 6.5 Long-run production costs Page: 151  
Subtopic: Firm size and costs Type: Definition

232. The long-run average total cost curve:

- A) displays declining unit costs so long as output is increasing.
- B) indicates the lowest unit costs achievable when a firm has had sufficient time to alter plant size.
- C) has a shape which is the inverse of the law of diminishing returns.
- D) can be derived by summing horizontally the average total cost curves of all firms in an industry.

Ans: B Level: Easy Main Topic: 6.5 Long-run production costs Page: 151  
Subtopic: Firm size and costs Type: Definition

## Chapter 6 The organization and costs of production

233. What is the long-run average cost of producing 30 units of output?

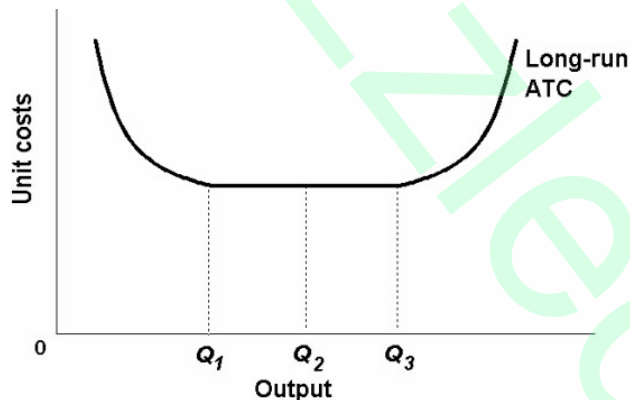
Refer to the following table which shows three short-run cost schedules for three plants of different sizes that a firm might build in the long run.

<i>Plant 1</i>		<i>Plant 2</i>		<i>Plant 3</i>	
Output	ATC	Output	ATC	Output	ATC
10	\$10	10	\$15	10	\$20
20	9	20	10	20	15
30	8	30	7	30	10
40	9	40	10	40	8
50	10	50	14	50	9

- A) \$7
- B) \$8
- C) \$9
- D) \$10

Ans: A Level: Moderate Main Topic: 6.5 Long-run production costs Page: 151  
Subtopic: Firm size and costs Type: Application

234. In the diagram it is assumed that:



- A) some costs are fixed and other costs are variable.
- B) all costs are variable.
- C) the law of diminishing returns determines the shape of the cost curve.
- D) marginal product first falls, but ultimately rises as output is increased.

Ans: B Level: Easy Main Topic: 6.5 Long-run production costs Page: 151  
Subtopic: Firm size and costs Type: Graphic

## Chapter 6 The organization and costs of production

235. In the long run a firm will choose a plant size that has the:

- A) minimum of average fixed costs.
- B) capacity to produce the largest quantity of the product.
- C) minimum average total cost of producing the target level of output.
- D) maximum level of factor of production use per unit of the total product of output.

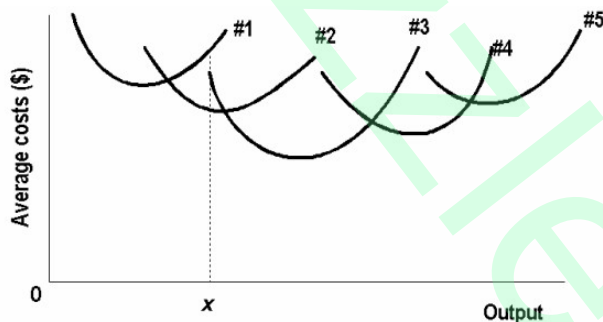
Ans: C Level: Difficult Main Topic: 6.5 Long-run production costs Page: 151  
Subtopic: Firm size and costs Type: Application

236. The long-run average total cost curve:

- A) will rise if diminishing returns are encountered.
- B) will fall if diminishing returns are encountered.
- C) will rise if economies of scale are incurred.
- D) is based on the assumption that all factors of production are variable.

Ans: D Level: Easy Main Topic: 6.5 Long-run production costs Page: 151  
Subtopic: The long-run cost curve Type: Application

237. The diagram shows the short-run average total cost curves for five different plant sizes of a firm. In the long run the firm should produce output  $0_x$  with a plant of size:

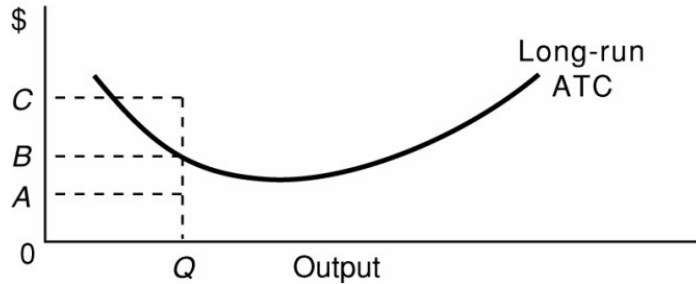


- A) #4
- B) #3.
- C) #2.
- D) #1.

Ans: C Level: Easy Main Topic: 6.5 Long-run production costs Page: 151-152  
Subtopic: The long-run cost curve Type: Graphic

## Chapter 6 The organization and costs of production

Use the following to answer questions 238-240:



238. Refer to the diagram above. For output level Q, per unit costs of C are:
- A) unobtainable and imply the inefficient use of factors of production.
  - B) unobtainable, given factor of production prices and the current state of technology.
  - C) obtainable, but imply the inefficient use of factors of production.
  - D) obtainable and imply that factors of production are being combined efficiently.

Ans: C Level: Easy Main Topic: 6.5 Long-run production costs Page: 151-152  
Subtopic: The long-run cost curve Type: Graphic

239. Refer to the diagram above. For output level Q, per unit costs of B are:
- A) unobtainable and imply the inefficient use of factors of production.
  - B) unobtainable, given factor of production prices and the current state of technology.
  - C) obtainable, but imply the inefficient use of factors of production.
  - D) obtainable and imply least-cost production of this output.

Ans: D Level: Easy Main Topic: 6.5 Long-run production costs Page: 151-152  
Subtopic: The long-run cost curve Type: Graphic

240. Refer to the diagram above. For output level Q, per unit costs of A are:
- A) unobtainable and imply the inefficient use of factors of production.
  - B) unobtainable, given factor of production prices and the current state of technology.
  - C) obtainable, but imply the inefficient use of factors of production.
  - D) obtainable and imply least-cost production of this output.

Ans: B Level: Easy Main Topic: 6.5 Long-run production costs Page: 151-152  
Subtopic: The long-run cost curve Type: Graphic

## Chapter 6 The organization and costs of production

Use the following to answer questions 241-242:

The letters A, B, and C designate three successively larger plant sizes.

Output	ATC-A	ATC-B	ATC-C
10	\$6	\$13	\$44
20	5	9	35
30	4	6	27
40	5	4	20
50	7	3	14
60	10	4	11
70	14	5	8
80	19	7	6
90	25	10	5
100	32	16	7

241. Refer to the data above. In the long run the firm should use plant size "A" for:

- A) all possible levels of output.
- B) 10 to 30 units of output.
- C) 30 to 60 units of output.
- D) all outputs greater than 40.

Ans: B Level: Difficult Main Topic: 6.5 Long-run production costs  
Page: 151-152 Subtopic: The long-run cost curve Type: Application

242. Refer to the data above. In the long run the firm should use plant size "C" for:

- A) all possible levels of output.
- B) 10 to 30 units of output.
- C) 40 to 70 units of output.
- D) all units of output greater than 80.

Ans: D Level: Difficult Main Topic: 6.5 Long-run production costs  
Page: 151-152 Subtopic: The long-run cost curve Type: Application

## Chapter 6 The organization and costs of production

Use the following to answer questions 243-245:

Plant sizes get larger as you move from ATC-1 to ATC-4.

Output	ATC-1	ATC-2	ATC-3	ATC-4
1500	\$10	\$15	\$20	\$30
2000	8	12	17	25
2500	9	10	15	20
3000	12	8	13	18
3500	15	6	11	16
4000	18	10	9	14
4500	20	12	7	12
5000	24	15	11	10
5500	29	19	13	8
6000	35	25	15	9

243. Refer to the table above. Which plant size would produce at least cost for the 3000-4000 level of output?

- A) 1
- B) 2
- C) 3
- D) 4

Ans: B Level: Easy Main Topic: 6.5 Long-run production costs Page: 151-152  
Subtopic: The long-run cost curve Type: Application

244. Refer to the table above. Which plant size would produce at least cost for the 5000-6000 level of output?

- A) 1
- B) 2
- C) 3
- D) 4

Ans: D Level: Easy Main Topic: 6.5 Long-run production costs Page: 151-152  
Subtopic: The long-run cost curve Type: Application

245. Refer to the table above. In the long run the firm should use plant size ATC-3 for what level of output?

- A) less than 3000.
- B) 3000 to 4000.
- C) 4000 to 4500.
- D) 5000 to 6000.

Ans: C Level: Moderate Main Topic: 6.5 Long-run production costs  
Page: 151-152 Subtopic: The long-run cost curve Type: Application

## Chapter 6 The organization and costs of production

246. Economies of scale are indicated by:

- A) the rising segment of the average variable cost curve.
- B) the declining segment of the long-run average total cost curve.
- C) the difference between total revenue and total cost.
- D) a rising marginal cost curve.

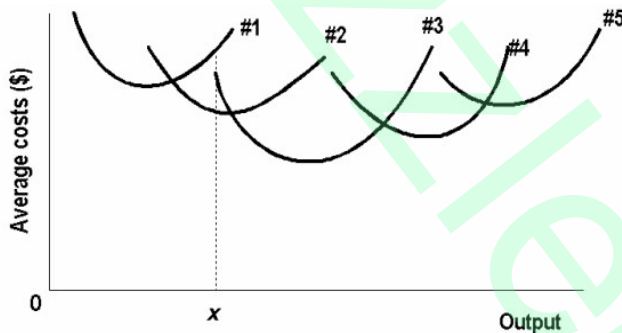
Ans: B Level: Easy Main Topic: 6.5 Long-run production costs Page: 152  
Subtopic: Economies and diseconomies of scale Type: Definition

247. A firm encountering economies of scale over some range of output will have a:

- A) rising long-run average cost curve.
- B) falling long-run average cost curve.
- C) constant long-run average cost curve.
- D) rising, then falling, then rising long-run average cost curve.

Ans: B Level: Easy Main Topic: 6.5 Long-run production costs Page: 152  
Subtopic: Economies and diseconomies of scale Type: Application

248. The following graph shows the short-run average total cost curves for five different plant sizes of a firm. The position of these five curves in relation to one another reflects:



- A) economies and diseconomies of scale.
- B) the effect of fixed costs on ATC as output increases.
- C) the law of constant costs.
- D) the law of diminishing returns.

Ans: B Level: Moderate Main Topic: 6.5 Long-run production costs Page: 152  
Subtopic: Economies and diseconomies of scale Type: Graphic



## Chapter 6 The organization and costs of production

249. The larger the diameter of a natural gas pipeline, the lower is the average total cost of transmitting 1,000 cubic feet of gas 1,000 miles. This is an example of:
- A) economies of scale.
  - B) normative economies.
  - C) diminishing marginal returns.
  - D) an increasing marginal product of labour.

Ans: A Level: Easy Main Topic: 6.5 Long-run production costs Page: 152  
Subtopic: Economies and diseconomies of scale Type: Application

250. Round Things, Inc.'s production process exhibits economies of scale. Currently their long-run average cost = \$1/unit. If Round Things doubles its use of all inputs, its new long-run average total cost will be:
- A) \$1/unit.
  - B) less than \$1/unit.
  - C) greater than \$2/unit.
  - D) greater than \$1/unit but less than \$2/unit.

Ans: B Level: Moderate Main Topic: 6.5 Long-run production costs  
Page: 152-154 Subtopic: Economies and diseconomies of scale Type: Application

251. If a firm doubles its output in the long run and its unit costs of production decline, we can conclude that:
- A) technological progress has occurred.
  - B) economies of scale are being realized.
  - C) the firm is encountering diminishing returns.
  - D) diseconomies of scale are being encountered.

Ans: B Level: Easy Main Topic: 6.5 Long-run production costs Page: 152-154  
Subtopic: Economies and diseconomies of scale Type: Definition

252. If long-run average total cost decreases as output increases, this is due to:
- A) declining average fixed costs.
  - B) the law of diminishing returns.
  - C) economies of scale.
  - D) externalities.

Ans: C Level: Easy Main Topic: 6.5 Long-run production costs Page: 152-154  
Subtopic: Economies and diseconomies of scale Type: Application

## Chapter 6 The organization and costs of production

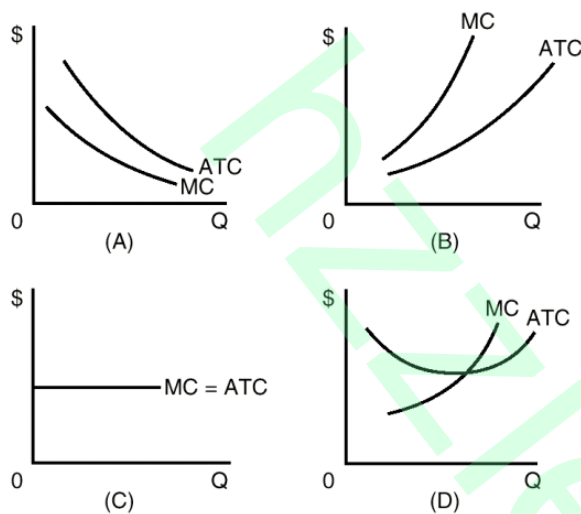
253. The primary reason why an introductory textbook costs less than an advanced textbook, even though the introductory textbook is several hundred pages longer and has fancier printing, is because of:

- A) the law of diminishing returns.
- B) constant returns to scale.
- C) economies of scale.
- D) sunk costs.

Ans: C Level: Moderate Main Topic: 6.5 Long-run production costs

Page: 152-154 Subtopic: Economies and diseconomies of scale Type: Application

254. "The bigger the volume, the lower the cost, and we pass these savings on to you" is a familiar slogan. It implies the situation shown in the graph:



- A) A.
- B) B.
- C) C.
- D) D.

Ans: A Level: Moderate Main Topic: 6.5 Long-run production costs

Page: 152-154 Subtopic: Economies and diseconomies of scale Type: Graphic

255. When a firm doubles its inputs and finds that its output has more than doubled, this is known as:

- A) economies of scale.
- B) constant returns to scale.
- C) diseconomies of scale.
- D) a violation of the law of diminishing returns.

Ans: A Level: Easy Main Topic: 6.5 Long-run production costs

Page: 152-154

Subtopic: Economies and diseconomies of scale Type: Definition

## Chapter 6 The organization and costs of production

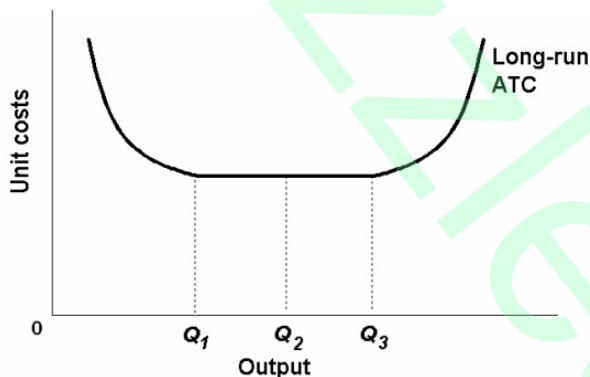
256. If all factors of production used in the production of a product are increased by 5 percent and output increases by more than 5 percent, then the firm is experiencing:
- A) economies of scale.
  - B) diseconomies of scale.
  - C) constant returns to scale.
  - D) increasing average total costs.

Ans: A Level: Easy Main Topic: 6.5 Long-run production costs Page: 152-154  
Subtopic: Economies and diseconomies of scale Type: Definition

257. If a firm is experiencing economies of scale, we can predict that:
- A) the long-run average total cost curve is upward sloping.
  - B) a 10 percent increase in all inputs will increase output by less than 10 percent.
  - C) a 10 percent increase in all inputs will increase output by more than 10 percent.
  - D) the firm is encountering problems of managerial bureaucracy because of its size.

Ans: C Level: Easy Main Topic: 6.5 Long-run production costs Page: 152-154  
Subtopic: Economies and diseconomies of scale Type: Application

258. Refer to the diagram. Economies of scale:



- A) are evident over the entire range of output.
- B) occur over the  $0Q_1$  range of output.
- C) begin at output  $Q_3$ .
- D) occur only over the  $Q_1Q_3$  range of output.

Ans: B Level: Easy Main Topic: 6.5 Long-run production costs Page: 152-154  
Subtopic: Economies and diseconomies of scale Type: Graphic

## Chapter 6 The organization and costs of production

259. If a firm increases all of its inputs by 10 percent and its output increases by 15 percent, we can say that:

- A) it is encountering diseconomies of scale.
- B) it is encountering economies of scale.
- C) the law of diminishing returns is taking hold.
- D) the firm's long-run ATC curve will be rising.

Ans: B Level: Easy Main Topic: 6.5 Long-run production costs Page: 152-154  
Subtopic: Economies and diseconomies of scale Type: Definition

260. A firm is encountering increasing returns to scale when it increases all of its inputs by 20 percent and its output increases by:

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

Ans: D Level: Moderate Main Topic: 6.5 Long-run production costs  
Page: 152-154 Subtopic: Economies and diseconomies of scale  
Type: Application

261. The following are short-run conditions for a firm.

Output	Total cost
0	\$ 80
1	160
2	240
3	320
4	400
5	480
6	560

All of the following statements are correct, except that the firm has:

- A) realized economies of scale.
- B) fixed costs of \$80.
- C) constant marginal cost.
- D) an average fixed cost of \$20 at 4 units of output.

Ans: A Level: Difficult Main Topic: 6.5 Long-run production costs  
Page: 152-154 Subtopic: Economies and diseconomies of scale Type: Calculation

## Chapter 6 The organization and costs of production

262. Which would contribute most to a firm experiencing "economies of scale"?

- A) rising long-run average costs
- B) the law of diminishing marginal returns
- C) specialization of production within a firm
- D) deterioration of information and control within a firm

Ans: C Level: Moderate Main Topic: 6.5 Long-run production costs Page: 154  
Subtopic: Economies and diseconomies of scale Type: Application

263. The term diseconomies of scale is reflected in:

- A) decreasing short-run average costs.
- B) increasing long-run average costs.
- C) increasing short-run marginal costs.
- D) decreasing long-run prices.

Ans: B Level: Easy Main Topic: 6.5 Long-run production costs Page: 154  
Subtopic: Economies and diseconomies of scale Type: Application

264. Diseconomies of scale:

- A) pertain to the long run.
- B) pertain to the short run.
- C) are synonymous with diminishing returns.
- D) are synonymous with increasing returns.

Ans: A Level: Easy Main Topic: 6.5 Long-run production costs Page: 154  
Subtopic: Economies and diseconomies of scale Type: Definition

265. When diseconomies of scale occur:

- A) the long-run average total cost curve falls.
- B) marginal cost intersects average total cost.
- C) the long-run average total cost curve rises.
- D) average fixed costs will rise.

Ans: C Level: Easy Main Topic: 6.5 Long-run production costs Page: 154  
Subtopic: Economies and diseconomies of scale Type: Application

266. Diseconomies of scale means that:

- A) a firm's long-run average total cost curve is declining.
- B) a firm's long-run average total cost curve is rising.
- C) the advantages of specialization are being more fully realized.
- D) a given increase in inputs results in a more-than-proportionate increase in output.

Ans: B Level: Easy Main Topic: 6.5 Long-run production costs Page: 154  
Subtopic: Economies and diseconomies of scale Type: Definition

## Chapter 6 The organization and costs of production

267. Which statement is not correct?

- A) The real cost of producing X is the amounts of products Y, Z, etc., which might have been produced with the factors of production devoted to X.
- B) Diseconomies of scale arise primarily from the difficulties in managing and coordinating a large-scale business enterprise.
- C) The law of diminishing returns accounts for the fact that the long-run average total cost curve is U-shaped.
- D) Average fixed costs diminish so long as output increases.

Ans: C Level: Moderate Main Topic: 6.5 Long-run production costs

Page: 154-155 Subtopic: Economies and diseconomies of scale Type: Application

Use the following to answer questions 268-269:

Plant sizes get larger as you move from ATC-1 to ATC-4.

Output	ATC-1	ATC-2	ATC-3	ATC-4
1500	\$10	\$15	\$20	\$30
2000	8	12	17	25
2500	9	10	15	20
3000	12	8	13	18
3500	15	6	11	16
4000	18	10	9	14
4500	20	12	7	12
5000	24	15	11	10
5500	29	19	13	8
6000	35	25	15	9

268. Refer to the table above. Over what range of output are economies of scale experienced by this firm?

- A) 1500 to 3000
- B) 1500 to 3500
- C) 2000 to 3500
- D) 2000 to 4000

Ans: B Level: Difficult Main Topic: 6.5 Long-run production costs

Page: 154-155 Subtopic: Economies and diseconomies of scale Type: Application

## Chapter 6 The organization and costs of production

269. Refer to the table above. Over what range of output are diseconomies of scale experienced by this firm?

- A) 3000 to 6000
- B) 3500 to 6000
- C) 4000 to 6000
- D) 4500 to 6000

Ans: B Level: Difficult Main Topic: 6.5 Long-run production costs

Page: 154-155 Subtopic: Economies and diseconomies of scale Type: Application

270. Refer to the data below. Economies of scale are realized over the \_\_\_ to \_\_\_ levels of output; diseconomies of scale exist over the \_\_\_ to \_\_\_ levels of output.

The letters A, B, and C designate three successively larger plant sizes.

Output	ATC-A	ATC-B	ATC-C
10	\$6	\$13	\$44
20	5	9	35
30	4	6	27
40	5	4	20
50	7	3	14
60	10	4	11
70	14	5	8
80	19	7	6
90	25	10	5
100	32	16	7

- A) 10, 30; 40, 100
- B) 10, 40; 80, 100
- C) 10, 50; 60, 100
- D) 10, 70; 80, 100

Ans: C Level: Difficult Main Topic: 6.5 Long-run production costs

Page: 154-155 Subtopic: Economies and diseconomies of scale Type: Application

271. Economies and diseconomies of scale explain:

- A) the profit-maximizing level of production.
- B) why the firm's long-run average total cost curve is U-shaped.
- C) why the firm's short-run marginal cost curve cuts the short-run average variable cost curve at its minimum point.
- D) the distinction between fixed and variable costs.

Ans: B Level: Moderate Main Topic: 6.5 Long-run production costs

Page: 154-155 Subtopic: Economies and diseconomies of scale Type: Definition

## Chapter 6 The organization and costs of production

272. If all factors of production used in the production of a product are increased by 10 percent and output increases by less than 5 percent, then the firm is experiencing:
- A) economies of scale.
  - B) diseconomies of scale.
  - C) constant returns to scale.
  - D) decreasing average total costs.

Ans: B Level: Easy Main Topic: 6.5 Long-run production costs Page: 154-155  
Subtopic: Economies and diseconomies of scale Type: Application

273. Diseconomies of scale arise primarily because:
- A) the short-run average total cost curve rises when marginal product is increasing.
  - B) of the difficulties involved in managing and coordinating a large business enterprise.
  - C) firms must be large both absolutely and relative to the market to employ the most efficient productive techniques available.
  - D) beyond some point marginal product declines as additional units of a variable factor of production (labour) are added to a fixed factor of production (capital).

Ans: B Level: Easy Main Topic: 6.5 Long-run production costs Page: 154-155  
Subtopic: Economies and diseconomies of scale Type: Application

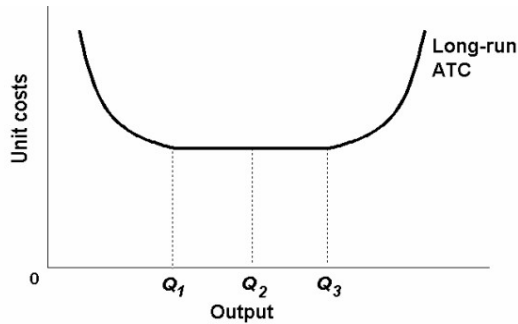
274. Which of the following relationships does not result from diminishing marginal returns?
- A) diseconomies of scale
  - B) upward-sloping short-run supply curves
  - C) marginal product is the slope of the total product curve
  - D) when marginal product becomes negative, total product is necessarily declining

Ans: A Level: Moderate Main Topic: 6.5 Long-run production costs  
Page: 154-155 Subtopic: Economies and diseconomies of scale Type: Application



## Chapter 6 The organization and costs of production

275. Refer to the diagram. Diseconomies of scale:



- A) begin at output  $Q_1$ .
- B) occur over the  $Q_1Q_3$  range of output.
- C) begin at output  $Q_3$ .
- D) are in evidence at all output levels.

Ans: C Level: Easy Main Topic: 6.5 Long-run production costs Page: 154-155  
Subtopic: Economies and diseconomies of scale Type: Graphic

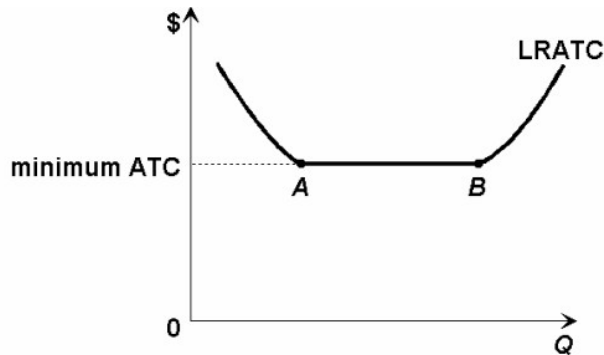
276. Which of the following relationships does not result from diminishing marginal returns?

- A) diseconomies of scale
- B) upward-sloping short-run supply curves
- C) marginal product is the slope of the total product curve
- D) when marginal product becomes negative, total product is necessarily declining

Ans: A Level: Moderate Main Topic: 6.5 Long-run production costs  
Page: 154-155 Subtopic: Economies and diseconomies of scale Type: Application

## Chapter 6 The organization and costs of production

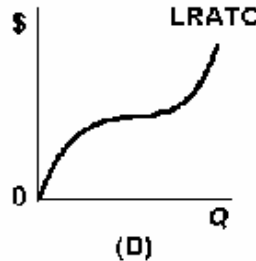
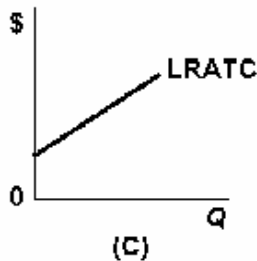
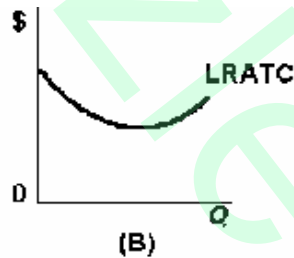
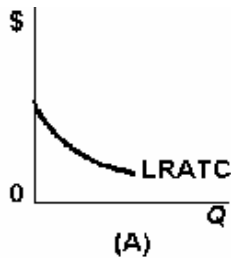
277. In the figure shown, the long-run average total cost curve (LRATC) indicates that there are diseconomies of scale:



- A) to the left of point A.
- B) to the right of point B.
- C) at points A and B.
- D) between points A and B.

Ans: B Level: Easy Main Topic: 6.5 Long-run production costs Page: 154-155  
Subtopic: Economies and diseconomies of scale Type: Graphic

278. Which of the figures correctly depicts a firm which does not experience diseconomies of scale?

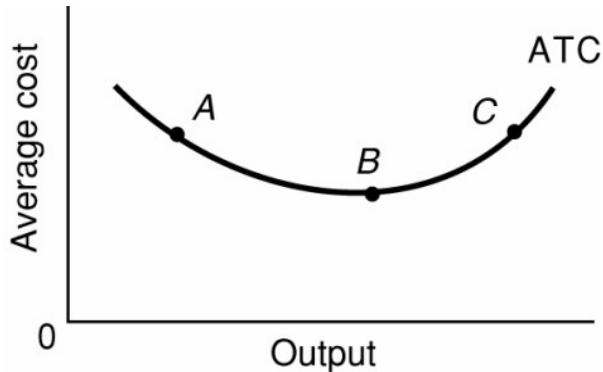


- A) graph A
- B) graph B
- C) graph C
- D) graph D

Ans: A Level: Difficult Main Topic: 6.5 Long-run production costs  
Page: 154-155 Subtopic: Economies and diseconomies of scale Type: Graphic

## Chapter 6 The organization and costs of production

279. In the long-run average total cost curve the:



- A) movement from A to B reflects diseconomies of scale.
- B) movement from B to C reflects diseconomies of scale.
- C) realization of economies of scale would shift the entire curve downward.
- D) movement from B to C reflects the law of diminishing returns.

Ans: B Level: Easy Main Topic: 6.5 Long-run production costs Page: 154-155  
Subtopic: Economies and diseconomies of scale Type: Graphic

280. The ABC Corporation decreases all of its inputs by 12 percent and finds that its output falls by only 8 percent. This means that initially it was producing:

- A) in the range of diseconomies of scale.
- B) in the range of economies of scale.
- C) where AP is less than MP.
- D) at the point of minimum efficient scale.

Ans: A Level: Moderate Main Topic: 6.5 Long-run production costs  
Page: 154-155 Subtopic: Economies and diseconomies of scale Type: Application

281. If the long-run average total cost curve for a firm is horizontal in the relevant range of production, then it indicates that there:

- A) is a minimum efficient scale.
- B) are constant returns to scale.
- C) are diseconomies of scale.
- D) are economies of scale.

Ans: B Level: Easy Main Topic: 6.5 Long-run production costs  
Page: 154-155 Subtopic: Economies and diseconomies of scale Type: Application

## Chapter 6 The organization and costs of production

282. If a firm increases all of its inputs by 10 percent and its output increases by 10 percent, we can say that:

- A) it is encountering diseconomies of scale.
- B) it is encountering economies of scale.
- C) it is encountering constant returns to scale.
- D) the marginal products of all inputs are falling.

Ans: C Level: Easy Main Topic: 6.5 Long-run production costs

Page: 154-155 Subtopic: Economies and diseconomies of scale Type: Application

283. The minimum efficient scale of a firm:

- A) is realized somewhere in the range of diseconomies of scale.
- B) occurs where marginal product becomes zero.
- C) is in the middle of the range of constant returns to scale.
- D) is the smallest level of output at which long-run average total cost is minimized.

Ans: D Level: Easy Main Topic: 6.5 Long-run production costs Page: 155

Subtopic: Minimum efficient scale and industry structure Type: Definition

284. Refer to the data.

The letters A, B, and C designate three successively larger plant sizes.

Output	ATC-A	ATC-B	ATC-C
10	\$6	\$13	\$44
20	5	9	35
30	4	6	27
40	5	4	20
50	7	3	14
60	10	4	11
70	14	5	8
80	19	7	6
90	25	10	5
100	32	16	7

At what level of output is minimum efficient scale realized?

- A) 30
- B) 40
- C) 50
- D) 60

Ans: C Level: Moderate Main Topic: 6.5 Long-run production costs Page: 155

Subtopic: Minimum efficient scale and industry structure Type: Application

## Chapter 6 The organization and costs of production

285. Refer to the table.

Plant sizes get larger as you move from ATC-1 to ATC-4.

Output	ATC-1	ATC-2	ATC-3	ATC-4
1500	\$10	\$15	\$20	\$30
2000	8	12	17	25
2500	9	10	15	20
3000	12	8	13	18
3500	15	6	11	16
4000	18	10	9	14
4500	20	12	7	12
5000	24	15	11	10
5500	29	19	13	8
6000	35	25	15	9

The firm experiences minimum efficient scale at what output level?

- A) 2500
- B) 3000
- C) 3500
- D) 4000

Ans: C Level: Moderate Main Topic: 6.5 Long-run production costs

Page: 155-156 Subtopic: Minimum efficient scale and industry structure

Type: Application

286. If the minimum efficient scale (MES) in an industry is 20 percent of the total consumption of a product, how many MES plants could be supported profitably in that industry?

- A) 5
- B) 10
- C) 20
- D) 100

Ans: A Level: Easy Main Topic: 6.5 Long-run production costs Page: 155-156

Subtopic: Minimum efficient scale and industry structure Type: Application

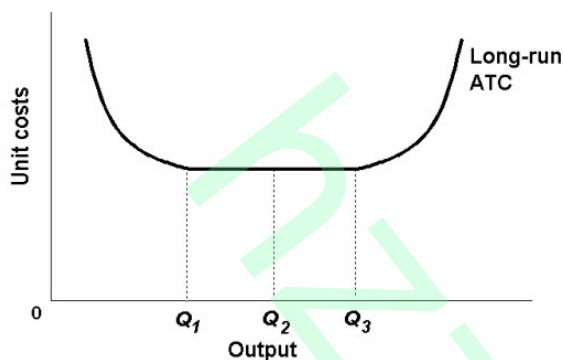
## Chapter 6 The organization and costs of production

287. If there are ten plants producing the total domestic consumption of the product and each plant is operating at minimum efficient scale, then each plant accounts for what percentage of domestic consumption?

- A) 5 percent
- B) 10 percent
- C) 20 percent
- D) 25 percent

Ans: B Level: Easy Main Topic: 6.5 Long-run production costs Page: 155-156  
Subtopic: Minimum efficient scale and industry structure Type: Application

288. Refer to the diagram. "Minimum efficient scale":



- A) occurs at some output greater than  $Q_3$ .
- B) is achieved at  $Q_1$ .
- C) is achieved at  $Q_3$ .
- D) cannot be identified in this diagram.

Ans: B Level: Easy Main Topic: 6.5 Long-run production costs Page: 155-156  
Subtopic: Minimum efficient scale and industry structure Type: Graphic

289. If an industry's long-run average total cost curve has an extended range of constant returns to scale, this implies that:

- A) technology precludes both economies and diseconomies of scale.
- B) the industry will be a natural monopoly.
- C) both relatively small and relatively large firms can be viable in the industry.
- D) the industry will be comprised of a very large number of small firms.

Ans: C Level: Moderate Main Topic: 6.5 Long-run production costs  
Page: 155-156 Subtopic: Minimum efficient scale and industry structure  
Type: Application

## Chapter 6 The organization and costs of production

290. A natural monopoly exists when:

- A) unit costs are minimized by having one firm produce an industry's entire output.
- B) several formerly competing producers merge to become the only firm in an industry.
- C) short-run average total cost curves are tangent to long-run average total cost curves.
- D) minimum efficient scale is attained at a small level of output.

Ans: A Level: Easy Main Topic: 6.5 Long-run production costs Page: 156  
Subtopic: Minimum efficient scale and industry structure Type: Definition

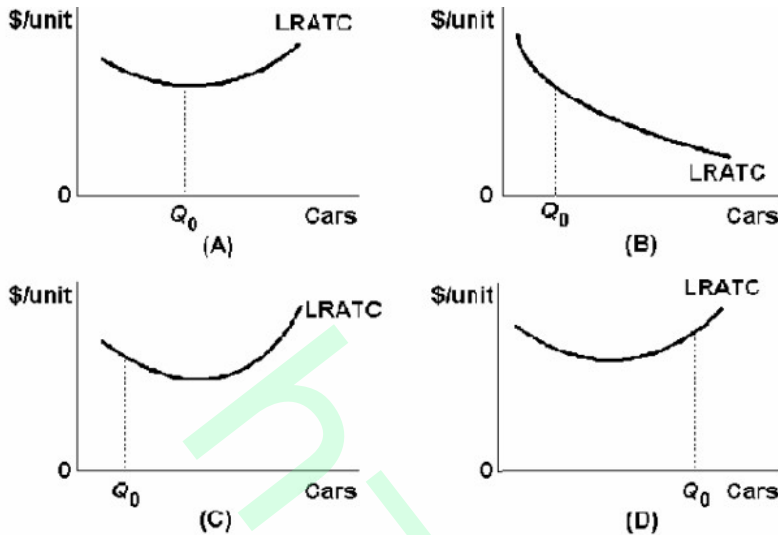
291. A natural monopoly is characterized by:

- A) collusion with other competitors to divide up the market.
- B) a decreasing average-cost curve over the feasible range of output.
- C) a firm protected from competition by a government regulation.
- D) a firm having control over the entire supply of a basic input in the production process.

Ans: B Level: Moderate Main Topic: 6.5 Long-run production costs Page: 156  
Subtopic: Minimum efficient scale and industry structure Type: Definition

## Chapter 6 The organization and costs of production

292. Assume that an aircraft company has opened a large manufacturing facility near Toronto with capacity  $Q_0$  per year. Shortly thereafter, the plant was closed and two smaller ones were opened in the same vicinity, each more profitably producing about one-half as many aircrafts as the old facility. Of the long-run average total cost (LRATC) graphs below, which one best shows the initial situation when only one plant was operating?



- A) graph A  
B) graph B  
C) graph C  
D) graph D

Ans: D Level: Moderate Main Topic: 6.5 Long-run production costs  
Page: 156-157 Subtopic: Applications and illustrations Type: Graphic

293. A cost which cannot be partly or fully recovered through any subsequent action is known as a(n):
- A) variable cost.  
B) fixed cost.  
C) marginal cost.  
D) sunk cost.

Ans: D Level: Easy Main Topic: Last Word Page: 158 Type: Definition

294. Which of the following is an example of a sunk cost, as it relates to a firm?
- A) an expenditure on raw materials used in the production process.  
B) an expenditure on a non-refundable, non-transferable airline ticket.  
C) an expenditure to buy a delivery van.  
D) an expenditure for research and development.

Ans: B Level: Moderate Main Topic: Last Word Page: 158 Type: Application



## Chapter 6 The organization and costs of production

295. Which of the following sayings relates most closely to the idea of sunk costs?

- A) Don't cry over spilt milk.
- B) A bird in the hand is worth two in the bush.
- C) He who hesitates is lost.
- D) Show me the money.

Ans: A Level: Easy Main Topic: Last Word Page: 158 Type: Application

296. Your car breaks down and you are deciding to have it repaired. The most relevant issue in this economic decision is:

- A) how much you spent on past repairs on the car.
- B) how much you paid for the car when you bought it.
- C) whether you have saved money to buy a new car.
- D) whether having the car repaired is worth the cost.

Ans: D Level: Moderate Main Topic: Last Word Page: 158 Type: Application

297. A fast-food company spends millions of dollars to develop and promote a new hamburger on their menu only to find that consumers won't buy it because they don't like the taste. From an economic perspective, the company should:

- A) keep the hamburger on the menu because they've spent so much money and time developing and promoting the product.
- B) spend more money to develop a more efficient way to cook the hamburger so it cooks in a shorter time.
- C) pull the hamburger off the menu and treat the development and promotion expenditures as a sunk cost.
- D) keep trying to sell the hamburger so that people who developed and promote it have a job with the company.

Ans: C Level: Moderate Main Topic: Last Word Page: 158 Type: Application

298. The real opportunity cost of producing product X is the amounts of products Y, Z, and so forth, which might have been produced if factors of production had not been used to produce X.

Ans: True Level: Easy Main Topic: 6.2 Economic costs Page: 137  
Type: Definition

299. Normal profit is an implicit cost.

Ans: True Level: Moderate Main Topic: 6.2 Economic costs Page: 138  
Type: Definition

## Chapter 6 The organization and costs of production

300. When economic profits equal zero, normal profits are negative or equal zero.

Ans: False   Level: Moderate   Main Topic: 6.2 Economic costs   Page: 138  
Type: Definition

301. Economic profits are usually larger than accounting profits.

Ans: False   Level: Difficult   Main Topic: 6.2 Economic costs   Page: 138  
Type: Application

302. The short run is a period of time during which all costs are fixed costs.

Ans: False   Level: Easy   Main Topic: 6.2 Economic costs   Page: 138  
Type: Definition

303. In the short run, the size (or capacity) of a firm's plant is variable.

Ans: False   Level: Moderate   Main Topic: 6.2 Economic costs   Page: 138-139  
Type: Application

304. When the marginal product of the variable input begins to decrease, total product also begins to decrease.

Ans: False   Level: Difficult   Main Topic: 6.3 Short-run production relationships  
Page: 140   Type: Application

305. The law of diminishing returns states that as successive amounts of a variable factor of production are added to a fixed factor of production, beyond some point marginal product will diminish.

Ans: True   Level: Easy   Main Topic: 6.3 Short-run production relationships  
Page: 140   Type: Definition

306. The law of diminishing marginal productivity explains why short-run production costs increase directly with a firm's level of output.

Ans: False   Level: Moderate   Main Topic: 6.3 Short-run production relationships  
Page: 140   Type: Application

307. When total product is increasing at a decreasing rate, marginal product is positive, but falling.

Ans: True   Level: Moderate   Main Topic: 6.3 Short-run production relationships  
Page: 141-142   Type: Application

## Chapter 6 The organization and costs of production

308. At zero units of output a firm's variable costs are zero.

Ans: True   Level: Easy   Main Topic: 6.4 Short-run production costs   Page: 144  
Type: Application

309. Variable costs are costs which vary directly with output.

Ans: True   Level: Easy   Main Topic: 6.4 Short-run production costs   Page: 145  
Type: Definition

310. Average fixed costs diminish continuously as output increases.

Ans: True   Level: Easy   Main Topic: 6.4 Short-run production costs   Page: 146  
Type: Application

311. The short-run marginal-cost curve is upward-sloping because of the law of diminishing marginal returns.

Ans: True   Level: Difficult   Main Topic: 6.3 Short-run production relationships  
Page: 147   Type: Application

312. If the marginal-cost curve lies below the average-variable-cost curve, the average-variable-cost curve must be falling.

Ans: True   Level: Difficult   Main Topic: 6.4 Short-run production costs  
Page: 147-148   Type: Application

313. When average costs are increasing, marginal costs are greater than average costs.

Ans: True   Level: Easy   Main Topic: 6.4 Short-run production costs  
Page: 147-148   Type: Application

314. The law of diminishing returns explains why the long-run average total cost curve is U-shaped.

Ans: False   Level: Moderate   Main Topic: 6.5 Long-run production costs  
Page: 151-152   Type: Application

315. A major factor explaining economies of scale is increased specialization of labour.

Ans: True   Level: Moderate   Main Topic: 6.5 Long-run production costs  
Page: 152   Type: Application

## Chapter 6 The organization and costs of production

316. If a firm triples its factor of production inputs and as a result output triples, then the long-run average cost curve is declining.

Ans: False   Level: Easy   Main Topic: 6.5 Long-run production costs  
Page: 152-154   Type: Application

317. Diseconomies of scale stem primarily from the difficulties in managing and coordinating a large-scale business enterprise.

Ans: True   Level: Easy   Main Topic: 6.5 Long-run production costs  
Page: 154   Type: Definition

318. Diseconomies of scale are caused by the law of diminishing marginal returns.

Ans: False   Level: Difficult   Main Topic: 6.5 Long-run production costs  
Page: 154   Type: Application

319. Minimum efficient scale occurs at the smallest level of output at which a firm can minimize long-run average costs.

Ans: True   Level: Moderate   Main Topic: 6.5 Long-run production costs  
Page: 155-156   Type: Application

320. The fundamental reason that newspapers have such high prices is the high production costs from diseconomies of scale.

Ans: False   Level: Moderate   Main Topic: 6.5 Long-run production costs  
Page: 155-156   Type: Application

321. The large increase in the price of corn in recent years has had a wide impact on the industries which use corn as an input.

Ans: True   Level: Easy   Main Topic: 6.5 Long-run production costs   Page: 156  
Type: Application

322. Some of a firm's costs are not only fixed, but are sunk.

Ans: True   Level: Moderate   Main Topic: Last word   Page: 158  
Type: Application