MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

1) The short run is a period of time in which
   A) nothing the firm does can be altered.
   B) the amount of output is fixed.
   C) prices and wages are fixed.
   D) the quantities of some resources the firm uses are fixed.

2) The short run is a period of time in which
   A) output prices are fixed.
   B) the quantity used of at least one resource is fixed.
   C) resource prices are fixed.
   D) the quantities used of all resource are fixed.

3) The short run is a time frame in which
   A) the quantities of some resources are fixed and the quantities of other resources can be varied.
   B) the quantities of all resources are fixed.
   C) the quantities of all resources can be varied.
   D) all costs are sunk costs.

4) An example of a variable resource in the short run is
   A) an employee.
   B) capital equipment.
   C) land.
   D) a building.

5) A cost that has already been made and cannot be recovered is called a
   A) marginal cost.
   B) fixed cost.
   C) variable cost.
   D) sunk cost.

6) The long run is a time frame in which
   A) the quantities of all resources are fixed.
   B) the quantities of all resources can be varied.
   C) the quantities of some resources are fixed and the quantities of other resources can be varied.
   D) all costs are sunk costs.

7) In the long run, a firm can vary
   A) its capital but not its labor.
   B) its labor but not its capital.
   C) both its labor and its capital.
   D) neither its labor nor its capital.

8) The long run is distinguished from the short run in that, in the long run,
   A) output prices can vary.
   B) the firm no longer maximizes its profit.
   C) resource prices can vary.
   D) the quantities of all resources can be varied.
9) The marginal product of labor is the increase in total product from a
   A) one dollar increase in the wage rate, while holding the price of capital constant.
   B) one unit increase in the quantity of labor, while also increasing the quantity of capital by one unit.
   C) one unit increase in the quantity of labor, while holding the quantity of capital constant.
   D) one percent increase in the wage rate, while also increasing the price of capital by one percent.

10) The marginal product of labor is the change in total product from a one-unit increase in
    A) the wage rate.
    B) both the quantity of labor and the quantity of capital employed.
    C) the quantity of labor employed, holding the quantity of capital constant.
    D) the quantity of capital employed, holding the quantity of labor constant.

11) The marginal product of labor is the
    A) output level above which the slope of the total product curve falls.
    B) output level above which the rate of total product per unit of labor falls.
    C) maximum output attainable with fixed factors when labor is the only variable factor.
    D) change in output resulting from a one-unit increase in labor.

12) The average product of labor is
    A) the inverse of the average product of capital.
    B) total product divided by the total quantity of labor employed.
    C) the slope of the curve showing the total product of labor.
    D) the slope of the curve showing the marginal product of labor.

13) Average product is the
    A) maximum output attainable with fixed factors and one variable factor.
    B) total product per unit of an input.
    C) change in total product due to a one unit change in input.
    D) total product divided by the total cost.

<table>
<thead>
<tr>
<th>Total Product, Marginal Product, Average Product</th>
</tr>
</thead>
<tbody>
<tr>
<td>Labor (workers per day)</td>
</tr>
<tr>
<td>-------------------------</td>
</tr>
<tr>
<td>0</td>
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<tr>
<td>1</td>
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<tr>
<td>4</td>
</tr>
<tr>
<td>5</td>
</tr>
</tbody>
</table>

14) In the above table, the total product that is produced when the firm employs four workers is
    A) 8 . B) 15. C) 3.75. D) 3.

15) In the above table, the marginal product of the third worker is
16) In the above table, the marginal product of the fourth worker is

17) In the above table, the marginal product is greatest when the
   A) third worker is hired.  B) second worker is hired.
   C) fourth worker is hired.  D) first worker is hired.

18) In the above table, the average product of three workers is

19) In the above table, the average product is less than the marginal product
   A) when the first worker is hired.  B) when the second worker is hired.
   C) for the entire range of output given.  D) when the third worker is hired.

20) Points below a firm's total product curve are
   A) technologically efficient but not attainable.
   B) both attainable and technologically efficient.
   C) attainable but not technologically efficient.
   D) neither attainable nor technologically efficient.

21) Points on a firm's total product curve are
   A) both attainable and technologically efficient.
   B) neither attainable nor technologically efficient.
   C) technologically efficient but not attainable.
   D) attainable but not technologically efficient.

22) When the total product curve is drawn in a figure that measures employment along the horizontal
    axis, it is a graph that shows the
   A) maximum output attainable for each quantity of labor employed.
   B) minimum cost of producing a given amount of output using different techniques.
   C) maximum profit attainable for each unit of output sold per unit of labor employed.
   D) minimum output attainable for each quantity of labor employed.
23) In the figure above, the marginal product of the second worker is  
   A) 10 units.  
   B) 2 units.  
   C) 5 units.  
   D) 1 units.

24) In the above figure, after the second worker is hired, the marginal product of labor is  
   A) constant.  
   B) increasing.  
   C) zero.  
   D) diminishing.

25) At point d in the above figure, the average product of labor equals  
   A) approximately 1.  
   B) 3.75.  
   C) 15.  
   D) 4.

26) In the above figure, the average product of labor at point c is  
   A) 5.  
   B) 2.  
   C) 10.  
   D) None of the above answers are correct.

27) In the figure above,  
   A) f is an efficient point.  
   B) g is an efficient point.  
   C) d is an efficient point.  
   D) there are no efficient points.

28) In the above figure, an inefficient point is  
   A) a.  
   B) f.  
   C) g.  
   D) e.

29) In the above figure, an unattainable point is  
   A) a.  
   B) e.  
   C) f.  
   D) g.

30) In the above figure, the most efficient way to produce 10 units is to hire  
   A) 1 worker.  
   B) 5 workers.  
   C) 2 workers.  
   D) 3 workers.

31) In the above figure, the most efficient way to produce 15 units is to hire  
   A) 5 workers.  
   B) 3 workers.  
   C) 4 workers.  
   D) 2 workers.
32) In the above figure, the maximum number of units that 4 workers can produce is
A) 15 units. B) more than 15 units. C) 5 units. D) 10 units.

33) In the above figure, the marginal product of labor is zero at point
A) a. B) f. C) e. D) c.

34) At point e in the above figure, the marginal product of labor definitely
A) is at its maximum. B) is less than the average product of labor. C) equals the average product of labor. D) is greater than the average product of labor.

35) The steeper the slope of the total product curve, the
A) more efficient is the technology employed. B) higher is the level of the total cost curve. C) larger is the marginal product of labor. D) smaller is the marginal product of labor.

36) Increasing marginal returns to labor might occur at low levels of labor input because of
A) differing factor proportions. B) decreasing use of machinery and increasing use of technology. C) increasing average costs. D) increasing specialization of tasks.

37) In general, increasing marginal returns occur
A) as output expands at high levels of production. B) whenever the slope of the total product curve is positive. C) as output expands at low levels of production. D) through the entire range of production.

38) "Diminishing marginal returns" refer to a situation in which the
A) average cost of the last worker hired is less than the average cost of the previous worker hired. B) marginal cost of the last worker hired is less than the marginal cost of the previous worker hired. C) average product of the last worker hired is less than the average product of the previous worker hired. D) marginal product of the last worker hired is less than the marginal product of the previous worker hired.

39) The law of diminishing returns implies that, with the use of capital fixed, as the use of labor rises,
A) the marginal product of labor will fall eventually. B) total product will fall eventually. C) the production process will become technologically inefficient eventually. D) the total product of labor will fall below the marginal product of labor.
40) The law of diminishing returns states that as
A) a firm uses more of a variable input, given the quantity of fixed inputs, the firm’s average total cost will decrease eventually.
B) the size of a plant increases, the firm’s fixed cost decreases.
C) a firm uses more of a variable input, given the quantity of fixed inputs, the marginal product of the variable input eventually diminishes.
D) the size of a plant increases, the firm’s fixed cost increases.

41) If a firm’s marginal product of labor is less than its average product of labor, then an increase in the quantity of labor it employs definitely will
A) not change its average product of labor.  
B) decrease its average product of labor.  
C) increase its marginal product of labor.  
D) decrease its total product.

42) Total cost is the sum of fixed costs and
A) implicit costs.  
B) accounting costs.  
C) explicit costs.  
D) variable costs.

43) A firm has fixed costs
A) in the short run but not in the long run.  
B) in the long run but not in the short run.  
C) in the short run and in the long run.  
D) neither in the long run nor in the short run.

44) Total fixed cost is the sum of all
A) costs associated with the production of goods.  
B) explicit costs.  
C) costs of the firm’s fixed inputs.  
D) costs that rise as output increases.

45) Total variable cost is the sum of all
A) implicit costs.  
B) costs of the firm’s fixed inputs.  
C) costs that rise as output increases.  
D) costs associated with the production of goods.

46) A firm’s marginal cost is the increase in its total cost divided by the increase in its
A) output.  
B) average cost.  
C) average revenue.  
D) quantity of labor.

47) Marginal cost is
A) all the costs of production of goods.  
B) all the costs of the fixed inputs.  
C) the change in the total cost resulting from a one-unit change in output.  
D) all the costs that vary with output.
48) Marginal cost is calculated as
   A) the increase in total cost divided by the increase in labor, given the amount of capital.
   B) total cost minus total fixed cost.
   C) total cost divided by output.
   D) the increase in total cost divided by the increase in output.

49) A company could produce 99 units of a good for $316 or produce 100 units of the same good for $320. The marginal cost of the 100th unit
   A) is $320.
   B) is $3.20.
   C) is $4.00
   D) cannot be calculated with this information.

50) A company could produce 100 units of a good for $320 or produce 101 units of the same good for $324. The $4 difference in costs is
   A) the marginal benefit of producing the 101st unit.
   B) the marginal cost of producing the 101st unit.
   C) both the marginal benefit and the marginal cost of producing the 101st unit.
   D) neither the marginal benefit nor the marginal cost of producing the 101st unit.

51) As output increases, marginal cost will
   A) eventually decrease because of the law of diminishing returns.
   B) eventually increase because of the law of diminishing returns.
   C) eventually decrease because of the law of increasing returns.
   D) eventually increase because of the law of increasing returns.

52) By using more labor to produce more output, a firm can always reduce its
   A) average fixed cost.  B) marginal fixed cost of labor.
   C) marginal fixed cost of output.  D) average cost of labor.

53) By using more labor to produce more output, a firm can always reduce its
   A) average total cost.  B) average fixed cost.
   C) average variable cost.  D) marginal cost.

54) Average total costs are total costs divided by
   A) total fixed costs.  B) total output.
   C) the total number of workers employed.  D) total variable costs.

55) Average total costs are
   A) the change in output divided by the change in total costs.
   B) total costs divided by total output.
   C) the change in total costs divided by the change in output.
   D) total output divided by total costs.
## Cost schedule

<table>
<thead>
<tr>
<th>Labor (workers)</th>
<th>Output (units per day)</th>
<th>Total fixed cost (dollars)</th>
<th>Total variable cost (dollars)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
<td>20</td>
<td>0</td>
</tr>
<tr>
<td>1</td>
<td>4</td>
<td>20</td>
<td>25</td>
</tr>
<tr>
<td>2</td>
<td>9</td>
<td>20</td>
<td>50</td>
</tr>
<tr>
<td>3</td>
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<td>20</td>
<td>75</td>
</tr>
<tr>
<td>4</td>
<td>16</td>
<td>20</td>
<td>100</td>
</tr>
<tr>
<td>5</td>
<td>18</td>
<td>20</td>
<td>125</td>
</tr>
</tbody>
</table>

56) In the above table, the total cost of producing 9 units of output is

57) The above table shows a firm’s
   A) short-run and long-run costs.
   B) long-run costs.
   C) short-run costs.
   D) More information is needed to determine if the costs are long-run costs or short-run costs.

58) In the above table, the total variable cost of producing 16 units of output is
   A) $60.  B) $20.  C) $100.  D) $120.

59) Using the data in the above table, when output increases from 4 to 9 units, the marginal cost of one of those 5 units is
   A) $4.25.  B) $4.00.  C) $6.25.  D) $5.00.

60) Using the data in the above table, the average fixed cost of producing 9 units per day is
   A) $2.22.  B) $20.00.  C) $5.00.  D) $5.55.

61) Using the data in the above table, the average total cost of producing 16 units per day is
   A) $6.25.  B) $1.25.  C) $7.00  D) $7.50.

## Cost schedule

<table>
<thead>
<tr>
<th>Labor (workers)</th>
<th>Output (units per day)</th>
<th>Total variable cost (dollars)</th>
<th>Total cost (dollars)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td>30</td>
</tr>
<tr>
<td>1</td>
<td>3</td>
<td>20</td>
<td>50</td>
</tr>
<tr>
<td>2</td>
<td>8</td>
<td>40</td>
<td>70</td>
</tr>
<tr>
<td>3</td>
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<td>60</td>
<td>90</td>
</tr>
<tr>
<td>4</td>
<td>14</td>
<td>80</td>
<td>110</td>
</tr>
<tr>
<td>5</td>
<td>15</td>
<td>100</td>
<td>130</td>
</tr>
</tbody>
</table>

62) In the above table, the total fixed cost is
   A) $30.  B) $50.  C) $20.  D) $0.
63) In the above table, the total fixed cost at 3 units of output is
   A) $30.       B) $60.       C) $90.       D) $0.

64) In the above table, when output increases from 8 to 12 units, the marginal cost of one of those 4 units is
   A) $1.20.      B) $15.00.     C) $5.00.      D) $2.00.

65) In the above table, the average fixed cost of producing 15 units of output is
   A) $6.66.      B) $0.50.      C) $2.00.      D) $8.66.

66) In the above table, the average variable cost of producing 14 units of output is
   A) $0.175.     B) $7.86.      C) $5.71.      D) $10.00.

67) In the above table, the average total cost of producing 14 units of output is
   A) $5.71.      B) $7.00.      C) $7.86.      D) $6.75.

68) A firm's average total cost is $100, its average variable cost is $90, and its total fixed cost is $1,000. Its output is
   A) between 70 and 120 units.  B) less than 70 units.
   C) more than 170 units.       D) between 120 and 170 units.

69) A firm's average total cost is $80, its average variable cost is $75, and its output is 50 units. Its total fixed cost is
   A) less than $100.          B) more than $300.
   C) between $200 and $300.  D) between $100 and $200.

70) A firm's average variable cost is $60, its total fixed cost is $3,000, and its output is 600 units. Its average total cost is
   A) more than $64.         B) between $58 and $62.
   C) between $62 and $64.   D) less than $58.

71) A firm's average variable cost is $90, its total fixed cost is $10,000, and its output is 1,000 units. Its total cost is
   A) more than $105,000.    B) less than $85,000.
   C) between $95,000 and $105,000. D) between $85,000 and $95,000.

72) A firm's average total cost is $80, its fixed cost is $1000, and its output is 100 units. Its average variable cost
    A) is between $40 and $60.
    B) is more than $60.
    C) is less than $40.
    D) cannot be determined without more information.
73) A firm's marginal cost is $30, its average total cost is $50, and its output is 800 units. Its total cost of producing 801 units is
   A) between $40,050 and $40,080.
   B) greater than $40,080.
   C) less than $40,000.
   D) between $40,000 and $40,050.

74) A firm's marginal cost is $82, its average total cost is $50, and its output is 800 units. Its total cost of producing 801 units is
   A) greater than $40,080.
   B) between $40,050 and $40,080.
   C) less than $40,000.
   D) between $40,000 and $40,050.

75) A firm's output is 80 units, its marginal cost is $42, its average variable cost is also $42, and its average fixed cost is $10. The slope of its average fixed cost curve is
   A) positive but the precise slope cannot be calculated.
   B) positive and the slope is between 0 and 1.50.
   C) negative.
   D) not able to be calculated without more information.

76) The vertical distance between a firm's total cost (TC) and its total variable cost (TVC) curves
   A) is equal to the average variable cost, AVC.
   B) decreases as output decreases.
   C) is equal to the marginal cost, MC.
   D) is equal to the total fixed cost, TFC.

77) In the above figure, the total fixed cost curve is curve
   A) B.
   B) A.
   C) C.
   D) none of the curves in the figure

78) In the above figure, the total variable cost curve is curve
   A) A.
   B) B.
   C) C.
   D) none of the curves in the figure
79) In the above figure, the total cost curve is curve
   A) A.                      B) B.                      C) C.                      D) none of the curves in the figure

80) In the above figure, the relationship between costs indicates that the distance between curves
   A) B and C is equal to the average total cost.  B) A and B is equal to the variable cost.  
   C) A and B is equal to the fixed cost.         D) B and C is equal to the fixed cost.

81) As output increases, the slope of the curve showing the firm's average fixed cost is
   A) first negative then positive.  B) always positive.  
   C) always negative.  D) first positive then negative.

82) The vertical distance between a firm's average total cost curve, ATC, and its average variable cost 
    curve, AVC, 
   A) is equal to its average product.  B) is equal to its marginal cost, MC.  
   C) decreases as output increases.  D) is equal to its total fixed cost, TFC.

83) The marginal cost (MC) curve intersects the 
   A) AVC and AFC curves at their minimum points.  
   B) ATC and AFC curves at their minimum points.  
   C) ATC and AVC curves at their minimum points.  
   D) ATC, AVC, and AFC curves at their minimum points.

84) In the above figure, the marginal cost curve is curve
   A) A.                      B) B.                      C) C.                      D) D.

85) In the above figure, the average fixed cost curve is curve
   A) A.                      B) B.                      C) C.                      D) D.
86) In the above figure, the average variable cost curve is curve
A) A.  B) B.  C) C.  D) D.

87) In the above figure, the average total cost curve is curve
A) A.  B) B.  C) C.  D) D.

88) In the above figure, as output increases, the distance between curves B and C decreases because
A) average fixed cost decreases as output increases.
B) total cost decreases as output increases.
C) there are increasing marginal costs as output increases.
D) there are diminishing returns to average total cost.

89) In the above figure, curve D slopes downward because
A) there are diminishing returns.
B) average fixed costs decrease as output increases.
C) all costs decrease as output increases.
D) there are decreasing marginal costs.

90) In the above figure, the intersection of curves A and C is the point at which
A) total product is maximized.  B) average fixed cost is minimized.
C) average variable cost is minimized.  D) average total cost is minimized.

91) In the above figure, the intersection of curves A and B is the point at which
A) average total cost is minimized.  B) total product is maximized.
C) average variable cost is minimized.  D) average fixed cost is minimized.

92) Average variable cost is at a minimum at the same amount of output at which
A) average product is at a minimum.  B) marginal product is at a minimum.
C) marginal product is at a maximum.  D) average product is at a maximum.

93) The range of output over which a firm’s average variable cost is decreasing is the same as the range of its
A) marginal cost is increasing.  B) average product is increasing.
C) average cost is decreasing.  D) average fixed cost is decreasing.

94) A change in technology that shifts the firm’s total product curve upward without changing the quantity of capital used
A) does not change the cost curves.
B) shifts the marginal cost curve upward.
C) shifts the average total cost curve upward.
D) shifts the average total cost curve downward.
95) Which of the following is FALSE?

A) Fixed costs increase in the long run.
B) In the long run, both the amount of capital and labor used by the firm can be changed.
C) Long-run average variable costs equal long-run average total costs.
D) As a firm produces more output, eventually it experiences diseconomies of scale.

96) The average total cost curves for plants A, B, C and D are shown in the above figure. Which plant is best to use to produce 20 units per day?

A) plant A  B) plant B  C) plant C  D) plant D

97) The average total cost curves for plants A, B, C and D are shown in the above figure. Which plant is best to use to produce 60 units per day?

A) plant A  B) plant B  C) plant C  D) plant D

98) The average total cost curves for plants A, B, C and D are shown in the above figure. Which plant is best to use to produce 80 units per day?

A) plant A  B) plant B  C) plant C  D) plant D

99) The average total cost curves for plants A, B, C, and D are shown in the above figure. The plant size that is the most economically efficient

A) is plant A.  B) is plant B.
C) is plant C.  D) depends on the desired level of output.

100) The average total cost curves for plants A, B, C, and D are shown in the above figure. It is possible that the long-run average cost curve runs through points

A) d, e, and f.  B) a, b, and c.  C) c and d.  D) b, d, and e.
101) A firm is operating in its range of economies of scale and is on both its LRAC curve and its short-run ATC curve. At that level of output, the slope of its LRAC curve is
   A) zero and the slope of its ATC curve is zero.
   B) zero and the slope of its ATC curve is negative.
   C) negative and the slope of its ATC curve is negative.
   D) negative and the slope of its ATC curve is zero.

102) When economies of scale are present, the LRAC curve touches each short-run ATC curve
   A) at no points.
   B) to the right of the ATC curve’s minimum point.
   C) at the ATC curve’s minimum point.
   D) to the left of the ATC curve’s minimum point.

103) Economies to scale refer to
   A) the fact that in the long run, fixed costs remain constant as output increases.
   B) the range of output over which the long-run average cost falls as output increases.
   C) the point at which marginal cost equals average cost.
   D) a feature of short-run production functions but not long-run production functions.

104) In the short run
   A) some firms experience economies of scale.
   B) all firms experience increasing returns to scale.
   C) all inputs are variable.
   D) no firm experiences economies of scale.

105) When long-run average costs decrease as output increases, there are
   A) economies of scale.
   B) constant marginal costs.
   C) diseconomies of scale.
   D) constant returns to scale.

106) "Diseconomies of scale" occur in
   A) the short run, but not the long run.
   B) the long run, but not the short run.
   C) both the short run and the long run.
   D) neither the short run nor the long run.

107) When long-run average costs increase as output increases, there are
   A) diseconomies of scale.
   B) constant returns to scale.
   C) constant marginal costs.
   D) economies of scale.

108) A common source of diseconomies of scale is the
   A) application of the law of diminishing marginal returns to labor.
   B) application of the law of diminishing marginal returns to capital.
   C) application of the law of diminishing marginal returns to land.
   D) growing complexity of management and organizational structure.
109) In the above figure, the long-run average cost curve exhibits economies of scale
   A) between 5 and 10 units per hour.  B) between 20 and 25 units per hour.
   C) between 10 and 20 units per hour.  D) along the entire curve.

110) In the above figure, between 5 and 10 units per hour, the firm experiences
   A) constant returns to scale.  B) diseconomies of scale.
   C) economies of scale.  D) decreasing total fixed costs.

111) In the above figure, the long-run average cost curve exhibits constant returns to scale
   A) between 5 and 10 units per hour.  B) between 20 and 25 units per hour.
   C) between 10 and 20 units per hour.  D) along the entire curve.

112) In the above figure, the long-run average cost curve exhibits diseconomies of scale
   A) between 10 and 20 units per hour.  B) between 5 and 10 units per hour.
   C) between 20 and 25 units per hour.  D) along the entire curve.

113) In the above figure, between 20 and 25 units per hour, the firm experiences
   A) economies of scale.  B) constant returns to scale.
   C) increasing total fixed costs.  D) diseconomies of scale.

114) In the short run,
   A) the size of the plant is fixed.
   B) all inputs are fixed.
   C) all inputs are variable.
   D) some firms experience increasing returns to scale.
115) The long run is a time period in which
   A) all inputs are variable.
   B) one year or less elapses.
   C) all inputs are fixed.
   D) there is at least one fixed input and at least one variable input.

116) Total product divided by the total quantity of labor employed equals the
   A) average product of labor.
   B) average total cost.
   C) marginal product of labor.
   D) average variable cost.

117) Diminishing marginal returns occurs when
   A) all inputs are increased and output decreases.
   B) all inputs are increased and output increases by a smaller proportion.
   C) a variable unit is increased and its marginal product falls.
   D) a variable input is increased and output decreases.

118) The average product of labor exceeds the marginal product of labor
   A) when the average product of labor is at its maximum.
   B) when the marginal product of labor is at its maximum.
   C) when the average product of labor is rising.
   D) when the average product of labor is falling.

119) When the marginal product of labor exceeds the average product of labor,
   A) the average product of labor is increasing.
   B) the average product of labor is decreasing.
   C) the firm is experiencing decreasing returns to scale.
   D) the total product curve is negatively sloped.

120) Which cost always increases as output increases?
   A) total cost
   B) average total cost
   C) marginal cost
   D) average fixed cost

121) Pat’s Catering finds that when it caters 20 meals a week, its total cost is $6,000. If Pat has total
   variable cost of $5,000, what is Pat’s total fixed cost?
   A) $6,000
   B) $50
   C) $250
   D) $1,000

122) The change in total cost from producing another unit of output equals the
   A) marginal cost.
   B) variable cost.
   C) average total cost.
   D) average variable cost.

123) A farmer discovers that the total cost of growing 50 acres of eggplant is $50,000 and that the total
   cost of growing 51 acres of eggplant is $52,000. The marginal cost of the 51st acre of eggplant is
   A) $2,000.
   B) $50,000.
   C) $1,000.
   D) $52,000.
124) Which curve intersects the *AVC* curve at its minimum point?
   A) the *AFC* curve   B) the *MP* curve   C) the *ATC* curve   D) the *MC* curve

125) If the *ATC* curve has a positive slope, then the *MC* curve must be
   A) horizontal.   B) below the *ATC* curve.   C) above the *ATC* curve.   D) vertical.

126) The average variable cost curve shifts downward if
   A) the cost of a variable input increases.   B) there is a decrease in fixed costs.   C) there is a technological advance.   D) the price of output decreases.

127) The cost of a variable input, such as the wage paid to workers, decreases. This decrease shifts the
   A) marginal product of labor curve downward.   B) average variable cost curve downward.   C) total fixed cost curve downward.   D) marginal product of labor curve upward.

128) The *LRAC* curve
   A) equals the minimum points on all the short-run *ATC* curves.   B) generally lies above the short-run *ATC* curves.   C) equals the lowest attainable average total cost for all levels of output when all inputs can be varied.   D) equals the lowest possible marginal cost of producing the different levels of output.

129) The *LRAC* curve generally is

130) When a firm is experiencing economies of scale,
   A) the *MP* curve slopes upward.   B) the *MC* curve slopes downward.   C) the *LRAC* curve slopes downward.   D) diminishing returns to labor have been suspended.

131) Constant returns to scale means that as all inputs are increased,
   A) total output increases in the same proportion as do the inputs.   B) average total cost rises.   C) average total cost rises at the same rate as do the inputs.   D) total output remains constant.

132) When a firm is experiencing diseconomies of scale,
   A) the *LRAC* curve has a positive slope.   B) the *MC* curve has a negative slope.   C) it must also experience diminishing returns to labor.   D) the *MP* curve has a negative slope.
<table>
<thead>
<tr>
<th>Labor (workers)</th>
<th>Total product (units per day)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>2</td>
<td>12</td>
</tr>
<tr>
<td>3</td>
<td>19</td>
</tr>
<tr>
<td>4</td>
<td>23</td>
</tr>
<tr>
<td>5</td>
<td>25</td>
</tr>
</tbody>
</table>

133) Using the data in the above table, if the firm employs 3 workers, total product (measured in units per day) and average product and marginal product of the third worker (measured in units per worker) are
   A) 19, 6 1/3, and 9 respectively.
   B) 19, 3, and 9 respectively.
   C) 19, 6 1/3, and 7 respectively.
   D) 3, 19, and 6 1/3 respectively.

134) Using the data in the above table, if the firm employs 5 workers, total product (measured in units per day) and average product and marginal product of the fifth worker (measured in units per worker) are
   A) 25, 5.75, and 4 respectively.
   B) 23, 5.75, and 4 respectively.
   C) 25, 5.00, and 2 respectively.
   D) 23, 5.00, and 4 respectively.

135) Using the data in the above table, the average fixed cost of producing 16 units is
   A) $1.54 a unit.
   B) $2.22 a unit.
   C) $1.11 a unit.
   D) $1.25 a unit.

136) Using the data in the above table, when the firm increases its output from 4 to 9 units, the marginal cost of a unit is
   A) $5.00 a unit.
   B) $7.00 a unit.
   C) $4.00 a unit.
   D) $6.00 a unit.
137) In the above figure, which of the following statements is FALSE?
A) The total fixed cost curve is curve C.
B) Total variable cost and total cost both increase as output increases.
C) The vertical gap between curves A and B is equal to average fixed cost.
D) Marginal cost is equal to the slope of curve A.

138) In the above figure, which of the following statements is FALSE?
A) Average fixed cost decreases as output decreases.
B) The vertical gap between curves B and C equals marginal fixed cost.
C) Curve A is the marginal cost curve.
D) The vertical gap between curves B and C gets smaller as AFC decreases.
139) Poppy Lipstick is a lipstick producer. A decrease in the rent paid by Poppy Lipstick
   A) shifts its $TFC$ curve downward but not its $TVC$ curve.
   B) does not shift its $TFC$ curve but shifts its $TVC$ curve upward.
   C) does not shift its $TFC$ curve but shifts its $TVC$ curve downward.
   D) shifts both its $TFC$ curve and its $TVC$ curve downward.

140) Sticky Cakes is a bakery. A decrease in the wage rate that Sticky Cakes pays its workers
   A) shifts both its $MC$ curve and its $ATC$ curve downward.
   B) does not shift its $MC$ curve or its $ATC$ curve.
   C) does not shift its $MC$ curve but shifts its $ATC$ curve downward.
   D) shifts its $MC$ curve downward but not its $ATC$ curve.
Answer Key
Testname: UNTITLED2.TST

1) D
2) B
3) A
4) A
5) D
6) B
7) C
8) D
9) C
10) C
11) D
12) B
13) B
14) B
15) C
16) B
17) B
18) B
19) B
20) C
21) A
22) A
23) C
24) D
25) B
26) A
27) C
28) B
29) D
30) C
31) C
32) A
33) C
34) B
35) C
36) D
37) C
38) D
39) A
40) C
41) B
42) D
43) A
44) C
45) C
46) A
47) C
48) D
49) C
50) B
Answer Key
Testname: UNTITLED2.TST

51) B
52) A
53) B
54) B
55) B
56) C
57) C
58) C
59) D
60) A
61) D
62) A
63) A
64) C
65) C
66) C
67) C
68) A
69) C
70) A
71) C
72) B
73) D
74) A
75) C
76) D
77) C
78) B
79) A
80) C
81) C
82) C
83) C
84) A
85) D
86) C
87) B
88) A
89) B
90) C
91) A
92) D
93) B
94) D
95) A
96) A
97) B
98) C
99) D
100) A
## Answer Key

**Testname: UNTITLED2.TST**

101) C  
102) D  
103) B  
104) D  
105) A  
106) B  
107) A  
108) D  
109) A  
110) C  
111) C  
112) C  
113) D  
114) A  
115) A  
116) C  
117) C  
118) D  
119) A  
120) A  
121) D  
122) A  
123) A  
124) D  
125) C  
126) C  
127) B  
128) A  
129) D  
130) C  
131) A  
132) A  
133) C  
134) C  
135) D  
136) A  
137) C  
138) B  
139) A  
140) A