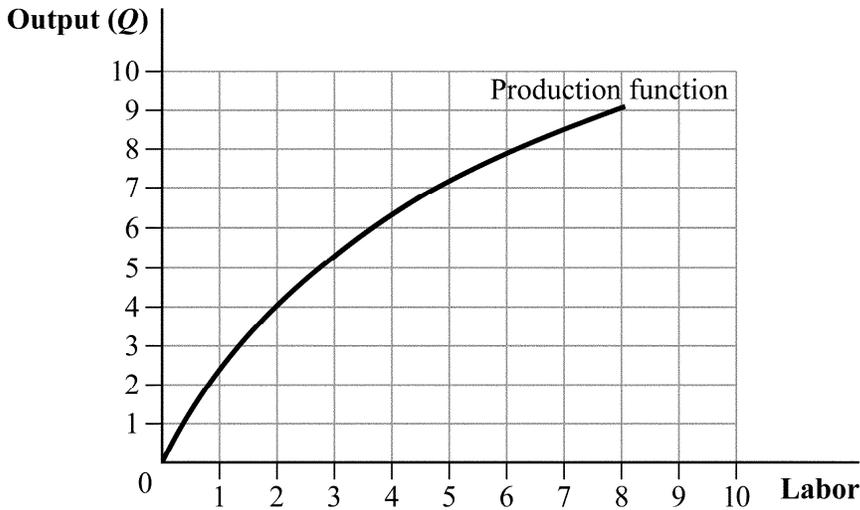


## Quiz #4 -- October 24, 2019

1. A basic assumption of the long run is that a firm:
  - A) cannot change the amount of labor or capital that it employs.
  - B) can change the amount of labor and capital that it employs.
  - C) can change the amount of capital that it employs but not the amount of labor.
  - D) cannot change the amount of capital that it employs but can change the amount of labor.
  
2. Brenda's Pastry employs three workers who produce 6 dozen pastries per hour. After Brenda hires a fourth worker, the number of pastries produced increases to 7 dozen per hour. Because the marginal product of the fourth worker is \_\_\_\_\_ than the average product of three workers the average product must \_\_\_\_\_.
  - A) greater; fall
  - B) less; rise
  - C) greater; rise
  - D) less; fall
  
3. Which of the following statements is (are) TRUE?
  - I. Accounting profit equals total revenue minus accounting cost.
  - II. Economic cost equals accounting cost minus opportunity cost.
  - III. Economic profit equals accounting profit plus opportunity cost.
  - IV. Economic profit equals total revenue minus economic cost.
  - A) I and IV
  - B) I, II, III, and IV
  - C) II and IV
  - D) I, III, and IV
  
4. Suppose a firm is currently minimizing costs in the long run with marginal product of labor and marginal product of capital given by  $K$  and  $L$ , respectively. If the price of capital falls by 50%, the capital-to-labor ratio will:
  - A) decrease by 50%.
  - B) double.
  - C) increase by 50%.
  - D) increase fivefold.
  
5. Why are the slopes of isocost lines constant?
  - A) because firms must use capital and labor inputs in fixed proportions
  - B) because firms can hire as much of an input as they desire without changing wages or rental rates
  - C) because firms must use less labor if employing more capital
  - D) because the marginal rate of technical substitution of labor for capital is constant

Use the following to answer question 6.

**Figure 6.1**



6. (Figure 6.1) The average product at  $L = 2$  and  $L = 8$  respectively are:  
 A) 2 and 1.13.      B) 0.5 and 0.89.      C) 8 and 72.      D) 1.5 and 0.5.
7. Suppose a firm with a production function given by  $Q = K^{0.25}L^{0.75}$  produces 1,500 units of output. The firm pays a wage of \$50 per unit and pays a rental rate of capital of \$50 per unit.  
 (Note:  $MR_L = \frac{3K^{0.25}}{4L^{0.25}}$ ;  $MP_K = \frac{L^{0.75}}{4K^{0.75}}$  ).  
 To minimize the cost of producing 1,500 units of output, the firm should use:  
 A) 3 times as many units of labor as units of capital.  
 B) equal amounts of labor and capital.  
 C) 1.25 times as many units of capital as units of labor.  
 D) 16 units of capital and 6,814 units of labor.
8. The production function given by  $Q = 10(0.7K^2 + 0.3L^2)^{0.5}$  has \_\_\_\_\_ returns to scale.  
 A) constant      B) instant      C) increasing      D) decreasing

9. Lilly's Lumberyard had the following revenues and costs last year:

**Costs**

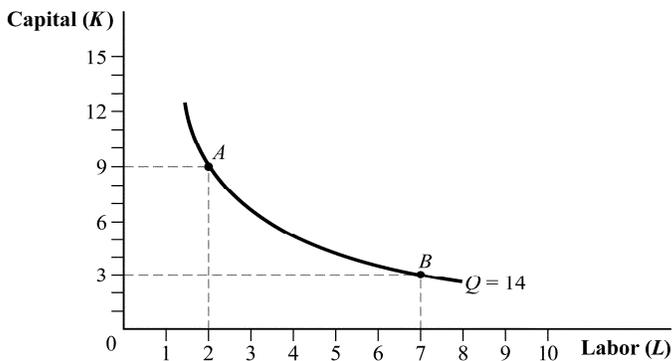
Lumber supplies	\$ 80,000
Building rent	40,000
Utilities & insurance	20,000
Employee salaries	150,000
Lilly's salary	110,000
Revenues	<b>\$400,000</b>

If Lilly did not own a lumberyard, she would earn \$115,000 per year as a store manager for Home Depot. Lilly's Lumberyard had an economic cost of \_\_\_\_\_ and an economic profit of \_\_\_\_\_.

- A) \$225,000; -\$75,000                      C) \$405,000; -\$5,000  
 B) \$400,000; \$35,000                      D) \$210,000; \$0

Use the following to answer question 10.

**Figure 6.3**



10. (Figure 6.3) Which of the following statements is (are) TRUE?

- I. More output is produced at point *A* than at point *B*.
- II. The ratio of the marginal product of labor to the marginal product of capital is higher at point *A* than at point *B*.
- III. The  $MRTS_{LK}$  is equal at points *A* and *B*.

- A) I, II, and III              B) II                      C) III                      D) II and III

**Answer Key - F19-4**

1. B
2. D
3. A
4. B
5. B
6. A
7. A
8. A
9. C
10. B