

Quiz #4 -- October 20, 2022

You have until the end of class to complete the quiz. Answer the questions on the answer sheet. Pick the alternative that best completes the statement or answers the question. Be sure to write and bubble in your name and PantherID on the answer sheet. You may keep the test booklet.

1. A fixed cost:
 - A) decreases as the firm increases output.
 - B) is associated with the firm's variable inputs.
 - C) captures the wear and tear of using capital in production.
 - D) does not change with the level of the firm's output.

2. A donut shop has a production function given by $Q = 50K^{1/3}L^{1/2}$, where Q is the number of donuts produced per hour, K is the number of donut fryers (which is fixed at eight in the short run), and L is the number of employed workers. How many donuts can be produced per hour with four workers in the short run?
A) 200 B) 167 C) 84 D) 320

3. A basic assumption of the short run is that a firm:
 - A) cannot adjust its workforce or the amount of capital it uses.
 - B) can freely adjust the amount of labor and capital that it employs.
 - C) can reduce the number of workers it uses, but it cannot adjust how much capital it uses.
 - D) can employ more workers and add more capital to the production process.

4. In the long run, because firms can adjust both capital and labor:
 - A) production is more expensive because firms must invest in both labor and capital.
 - B) firms fire workers, replacing the labor productivity with capital.
 - C) the impact of diminishing marginal returns is lessened.
 - D) firms will grow.

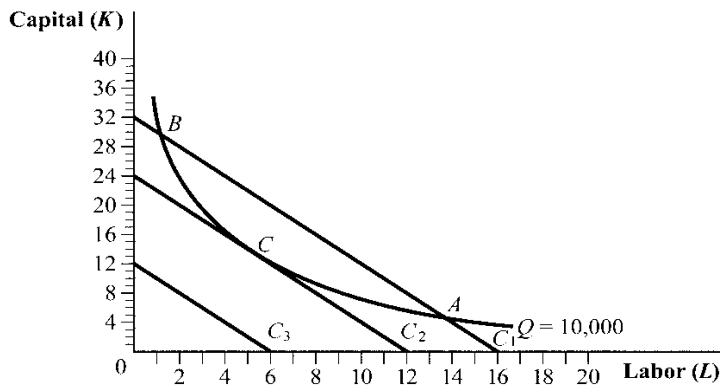
5. Which of the following statements is (are) TRUE?

- I. If $TC = \$40,000$ and $FC = \$18,000$, then $VC = \$58,000$.
- II. Because fixed cost does not vary with output, the fixed cost curve is a vertical line.
- III. The total cost and variable cost curves always have the same shape and slope.
- IV. When output is zero, total cost equals fixed costs.

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

Use the following to answer question 6.

Figure 6.9



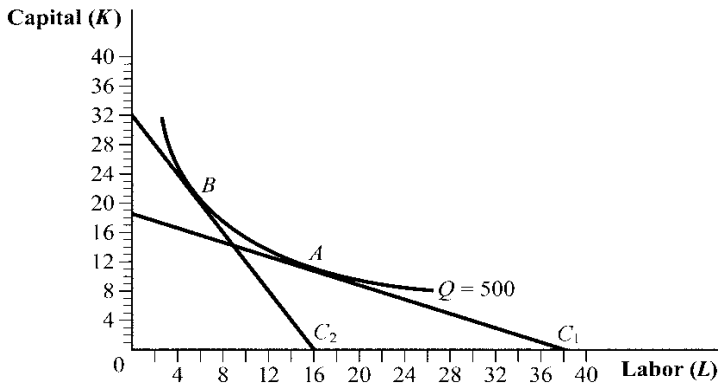
6. (Figure 6.9) Which of the following statements is (are) TRUE?

- I. The firm minimizes the cost of producing 10,000 units of output at point C.
- II. If the firm chooses an input combination that lies on C_3 , the firm will be able to produce 10,000 units of output at a lower cost than at point A.
- III. The cost of producing 10,000 units of output is greater at point B than at point A.

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

Use the following to answer question 7.

Figure 6.10



7. (Figure 6.10) Which of the following statements is (are) TRUE?

- I. If labor is cheaper than capital, the firm will produce at point *B*.
- II. If capital is more expensive than labor, the firm will produce at point *A*.
- III. At point *A*, the $MRTS_{LK} = W/R$.

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

8. Which of the following production functions exhibit(s) constant returns to scale?

- I. $Q = \frac{KL}{K + L}$
- II. $Q = 2K + L$
- III. $Q = K^{0.8}L^{0.2}$

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

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

Costs

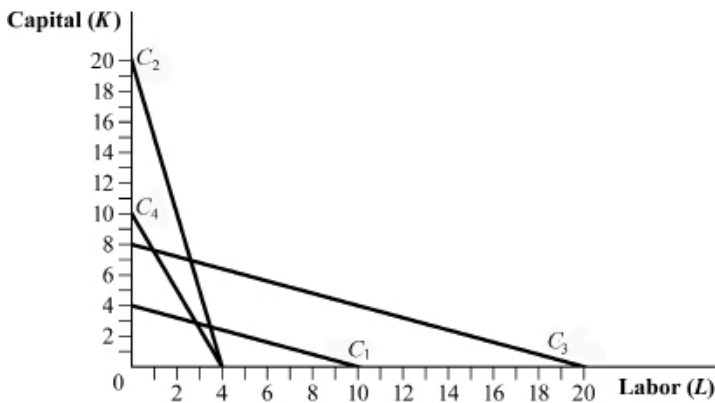
Lumber supplies	\$ 80,000
Building rent	40,000
Utilities & insurance	20,000
Employee salaries	150,000
Lilly's salary	110,000
Revenues	\$400,000

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

Use the following to answer question 10.

Figure 6.5



10. (Figure 6.5) Suppose a firm spends \$4,000 per day producing a good. The wage rate per worker is \$200 per day and rental rate per unit of capital is \$500 per day. The firm's isocost line at the current expenditure level is represented by:

- A) C_2 . B) C_1 . C) C_4 . D) C_3 .

Answer Key - F22-4

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