

Quiz #4 -- November 2, 2017

1. An entrepreneur gathers the following information to make a decision on whether to stay open for business or to shut down permanently:

Future operating revenues = \$18 million

Future operating costs = \$14 million

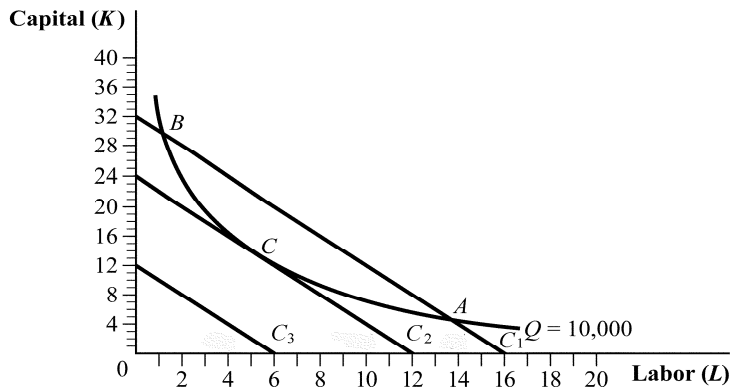
Sunk costs = \$8 million

What should the entrepreneur do?

- A) The entrepreneur should shutdown the business, because the operating revenues are insufficient to cover the operating costs and sunk costs.
- B) The entrepreneur should continue to operate the business, because the operating revenues exceed the operating costs.
- C) The entrepreneur should continue to operate the business to help pay off the sunk costs.
- D) The entrepreneur should shutdown the business, because the sunk costs are greater than zero.
2. A firm is producing 4 units of output at an average total cost of \$40. When the firm produces 5 units of output, average total cost rises to \$50. What is the marginal cost of the fifth unit of output?
- A) \$90
- B) \$120
- C) \$30
- D) \$10
3. Suppose a firm is producing 2,475 units of output by hiring 50 workers ($W = \$20$ per hour) and 25 units of capital ($R = \$10$ per hour). The marginal product of labor and marginal product of capital are 40 and 25, respectively. Is the firm minimizing the cost of producing 2,475 units of output?
- A) No, the firm should use more of both labor and capital.
- B) Yes, the ratio of the number of workers to the wage equals the ratio of the number of units of capital to the rental rate.
- C) No, the firm should use more labor and less capital.
- D) No, the firm should use more capital and less labor.

Use the following to answer question 4.

Figure 6.10



4. (Figure 6.10) Which of the following statements is 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*.

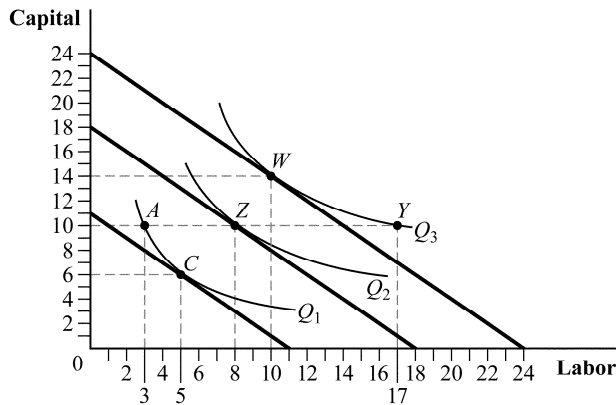
- A) I only
- B) I, II, and III
- C) I and III
- D) II and III

5. A firm is producing 50 units of output at a total cost of \$1,000, with a per-unit variable cost of \$8. What is the firm's average fixed cost?

- A) \$4
- B) \$12
- C) \$20
- D) \$28

Use the following to answer question 6.

Figure 7.10



6. (Figure 7.10) Suppose the firm is currently producing at point Z and wants to reduce its output to Q_1 . Which of the following statements is TRUE?
- A) In the short run, the firm will move to point A , where total costs of production are higher than at point C .
 - B) In the long run, the firm will move to point A , where total costs of production are lower than at point C .
 - C) In the short run, the firm will move to point A , where total costs of production are lower than at point C .
 - D) The firm will move along its long-run expansion path from point Z to point A .
7. The production function given by $Q = 10(0.7K^2 + 0.3L^2)^{0.5}$ has _____ returns to scale.
- A) instant
 - B) constant
 - C) increasing
 - D) decreasing
8. Suppose a firm's total cost and marginal cost are given by $TC = 192 + 10Q + 3Q^2$ and $MC = 10 + 6Q$. What is the output level that minimizes average total cost?
- A) 21
 - B) 4
 - C) 1.5
 - D) 8

Use the following to answer question 9.

Table 6.3

Units of Capital, <i>K</i>	Units of Labor, <i>L</i>			
	1	2	3	4
1	50.0	66.7	75.5	80.0
2	66.7	100.0	120.0	133.3
3	75.0	120.0	150.0	171.4
4	80.0	133.3	171.4	200.0

9. (Table 6.3) This table illustrates a _____ production function because capital and labor _____.

- A) short-run; can both be varied
- B) long-run; can both be varied
- C) short-run; are used in equal increments
- D) long-run; are used in equal increments

10. Which of the following statements is TRUE?

- I. The firm's total cost is the sum of its fixed and variable costs.
- II. Over longer time horizons, the costs of the firm's inputs tend to become fixed.
- III. In the long run, the firm can adjust the use of all of its inputs.

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

Answer Key - F17-4

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