

Sample Exam Problems Related to Chapter 4
(Source: Fall 2008 Midterm Exam, ECO 5315)

1. A production function is a table, a graph, or an equation showing the
 - A. least-cost method of producing output.
 - B. optimal combination of inputs.
 - C. maximum output that can be achieved from specified levels of inputs.
 - D. combinations of inputs that can be produced with equal costs.
 - E. optimal production technology that a firm should employ.

2. When average product is at a maximum, marginal product is
 - A. zero.
 - B. increasing.
 - C. equal to average product.
 - D. greater than average product.
 - E. less than average product.

3. The law of diminishing marginal returns states that
 - A. the marginal product of labor declines as all inputs are increased.
 - B. production functions exhibit decreasing returns to scale.
 - C. the marginal product of labor returns as more capital is used.
 - D. the marginal product of a factor eventually diminishes as more of the input is used, holding other inputs fixed.
 - E. the marginal product of a factor always diminishes as more of the input is used, holding other inputs fixed.

4. If output is produced according to $Q = (KL)^{3/4}$, then this production process exhibits
 - A. increasing returns to scale.
 - B. decreasing returns to scale.
 - C. first increasing and then decreasing returns to scale.
 - D. constant returns to scale.

5. An isoquant represents combinations of inputs that
 - A. produce the same level of output.
 - B. produce increasing amounts of output.
 - C. minimize costs.
 - D. maximize output.
 - E. create wealth.

6. The marginal rate of technical substitution between two inputs
- A. shows the rate at which one input can be traded for another, holding output constant.
 - B. shows the efficient combination of inputs.
 - C. increases as we move down an isoquant.
 - D. shows the rate at which output can be increased by using more of both inputs.
 - E. shows the rate at which output decreases when using less of one of the inputs.
7. Lines that represent bundles of inputs that cost the same total amount are called
- A. total cost curves.
 - B. isocost curves.
 - C. cost curves.
 - D. isoquants.
 - E. isoprofit curves.
8. If output is produced according to $Q = 3K + 4L$, then this production process exhibits
- A. increasing returns to scale.
 - B. decreasing returns to scale.
 - C. first increasing and then decreasing returns to scale.
 - D. constant returns to scale.
 - E. first decreasing and then increasing returns to scale.
9. If output is produced according to $Q = 4LK$ (L is the quantity of labor input and K is the quantity of capital input), the price of K is \$10, and the price of L is \$5, then the cost minimizing combination of K and L capable of producing 32 units of output is
- A. $L = 8$ and $K = 1$.
 - B. $L = 4$ and $K = 2$.
 - C. $L = 2$ and $K = 2$.
 - D. $L = 2$ and $K = 4$.
 - E. $L = 1$ and $K = 8$.