

Microeconomics: Monika Köppl – Turyna

Additional Problems: Production

The short run is defined as that period of time during which

- A. One or more inputs cannot be freely varied
- B. All inputs are variable
- C. All inputs are fixed
- D. Labor is counted as a fixed input

If capital and labor are perfect substitutes in a production function, the isoquants for this function will be

- A. Concave from above
- B. Convex from above
- C. A straight line
- D. Any one of the above depending on the particular combination of labor and capital employed

The marginal product of a variable input is

- A. Zero at the point of diminishing returns
- B. The change in the average product that occurs when the variable input is increased one unit
- C. The change in the total product that occurs in response to a unit change in the variable input
- D. The second derivative of the total product function

. The law of diminishing returns to an input says that if other inputs are fixed

- A. output eventually will decrease with increases of the variable input
- B. change in output will eventually decrease with increases in the variable input
- C. revenue will eventually decrease with increases in the variable input.
- D. the variable input will eventually decrease with more output

In a short-run production function before diminishing returns set in,

- A. Both MP_L and AP_L will have positive slopes and MP_L will lie above AP_L
- B. Both MP_L and AP_L will have positive slopes and AP_L will lie above MP_L
- C. Both MP_L and AP_L will have negative slopes and MP_L will lie above AP_L
- D. Both MP_L and AP_L will have negative slopes and AP_L will lie above MP_L

Diminishing returns begin to occur

- A. When the slope of the ray from the origin reaches a maximum
- B. When the total product curve reaches a maximum
- C. When the slope of the total product curve reaches a maximum
- D. When the marginal product curve intersects the average product curve

When the marginal product curve lies below the average product curve,

- A. The average product curve must be falling
- B. The total product curve must be falling
- C. The average product curve must be rising
- D. The marginal product curve must be rising

The rate at which one input can be exchanged for another without altering output is called

- A. The slope of the total product curve
- B. The marginal rate of technical substitution
- C. The slope of the marginal product of labor
- D. The law of diminishing returns of labor

A production function for which proportional changes in all inputs leads to a more-than-proportional change in output is said to exhibit

- A. Diminishing returns
- B. Decreasing returns to scale
- C. Constant returns to scale
- D. Increasing returns to scale

The defining characteristics of increasing returns to scale may be summarized as

- A. $F(cK, cL) > cF(K, L)$
- B. $F(cK, cL) = cF(K, L)$
- C. $F(cK, cL) < cF(K, L)$
- D. $Q = \min(aK, aL)$

Suppose that at a firm's current level of production the marginal product of capital is equal to 10 units, while the marginal rate of technical substitution between capital and labor is 2. Given this, we know the marginal product of labor must be:

- A. 5
- B. 20
- C. 10
- D. It is not possible to say with the information given in the problem