

2.2 Short Run and Long Run - Practice Problems

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Your firm can use labor l and capital k to produce output according to the production function:

$$q = 4lk$$

The marginal products are:

$$MP_l = 4k$$

$$MP_k = 4l$$

Suppose you need to produce 144 units, the price of labor is \$10, and the price of capital is \$40.

1. What is the least-cost combination of labor and capital that produces 144 units of output?
2. How much does this combination cost?
3. Does this technology experience constant returns, increasing returns, or decreasing returns to scale?