

Answer on question #60189-Economics - Microeconomics

Fixed Cost is 15 and variable cost is 2 per unit, find:

- write the function for Total Cost (TC), Average Cost (AC) and Marginal Cost (MC)
- determine the value for Q that minimum AC
- prove that the answer in (b) $AC=MC$

Solution

a).

The total cost (TC) is calculated as summary fixed cost (FC) and variable cost (VC).

$$TC = 15 + 2 * Q$$

The average cost (AC) measure relationship between the total costs to outputs (Q).

$$AC = TC/Q$$

$$AC = (15 + 2Q)/Q$$

$$AC = 15/Q + 2$$

The marginal cost (MC) is the change in total cost (TC) or total variable cost (TVC) that results from producing 1 more unit of output (Q):

$$MC = \Delta TC / \Delta Q$$

The marginal cost will be derivative from total cost function

$$MC = \frac{dTC(q)}{dq} = 2$$

$$MC = 2$$

b).

The average cost is minimized when marginal cost equals average cost.

$$MC = AC$$

$$2 = 15/Q + 2$$

$$2Q = 2Q + 15$$

So, it is a situation when the average cost is above the marginal cost at any point of outputs.

c).

The natural monopoly will almost always have fixed costs as the barriers to entry for competitors. If a firm has high fixed costs at the onset, its marginal costs would always be less than its average costs.

Answer

a).

$$TC = 15 + 2 * Q$$

$$AC = 15/Q + 2$$

$$MC = 2$$

b).

The average cost isn't minimized at any point of outputs.

c).

The company has a high fixed cost which is the barriers for entry on the scale. If a company is natural monopolist on a market it runs without efficiency.