

Answer on question #60147-Economics – Macroeconomics

Given fix cost is RM 15 and variable cost is RM 2 per unit.

1. State the function of TC, AC and MC
2. State the quantity if AC is minimum
3. Prove it if AC = MC

Solution

1.

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 cost 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

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

$$MC = 2$$

2.

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.

3.

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

1.

$$TC = 15 + 2 * Q$$

$$AC = 15/Q + 2$$

$$MC = 2$$

2. The average cost isn't minimized at any point of outputs.
3. 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.

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