

What is Marginal Cost?

Worksheet

Marginal cost (MC) is the extra cost of producing one additional unit: $MC = \Delta TC \div \Delta Q$. For example, if producing 10 units costs £100 and 11 units costs £106, the MC of the 11th unit is £6.

Questions

1. Total cost rises from £400 to £415 when output goes from 20 to 21 units. What is MC?
A) £15
B) £400
C) £415
D) £20
2. The MC curve is U-shaped because...
A) costs always rise
B) economies of scale at first, then diminishing returns
C) firms want profits
D) suppliers charge more
3. A firm maximises profit when...
A) $MC = 0$
B) $Price = MC$
C) Price is highest
D) Costs are lowest
4. If MC falls as output rises, what happens to AC?
A) AC also falls
B) AC stays constant
C) AC rises
D) AC can't be determined
5. At 50 units, total cost is £500. At 51 units, total cost is £508. What is the marginal cost?
6. A café produces 100 coffees for £200 and 101 coffees for £202.50. Find MC.
7. A printer makes 30 booklets at total cost £300, and 32 booklets at £315. What is MC per additional booklet?
8. Define: What is marginal cost?
9. Define: Is marginal cost always rising?
10. Define: Why do firms care about MC?

Answer Key

1. A) $\text{£15} - \text{MC} = \text{Change in TC} \div \text{Change in Q} = \text{£415} - \text{£400} = \text{£15}$.
2. B) economies of scale at first, then diminishing returns — Efficiency gains early on (MC falls), but crowding and resource limits later (MC rises).
3. B) $\text{Price} = \text{MC}$ — Profit maximisation occurs where marginal revenue = marginal cost (or $\text{Price} = \text{MC}$ in perfect competition).
4. A) AC also falls — When MC is below AC, it pulls AC down.
5. Total cost at 50 units = £500 Total cost at 51 units = £508 $\text{MC} = \text{£508} - \text{£500} = \text{£8}$ per unit
6. Cost of 100 coffees = £200 Cost of 101 coffees = £202.50 $\text{MC} = \text{£202.50} - \text{£200} = \text{£2.50}$ per coffee
7. Cost at 30 booklets = £300 Cost at 32 booklets = £315 Change in output = $32 - 30 = 2$ booklets $\text{MC} = (\text{£315} - \text{£300}) \div 2 = \text{£15} \div 2 = \text{£7.50}$ per booklet
8. The additional cost to produce one more unit: $\text{MC} = \Delta\text{TC} \div \Delta\text{Q}$.
9. No, MC typically falls at first (economies of scale) then rises (diminishing returns).
10. Profit maximisation rule: produce until $\text{MC} = \text{Price}$ (or Marginal Revenue).

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