

# ECONOMICS COST

## NUMERICAL

Total Cost = Fixed Cost + Variable Cost

$$TC = TFC + TVC$$

$$\text{AVERAGE COST (ATC)} = \frac{\text{Total Cost}}{\text{Output}} = \frac{TC}{Q}$$

$$\text{AVERAGE FIXED COST (AFC)} = \frac{\text{Total fixed Cost}}{\text{Output}} = \frac{TFC}{Q}$$

$$\text{AVERAGE VARIABLE COST (AVC)} = \frac{\text{Total variable Cost}}{\text{Output}} = \frac{TVC}{Q}$$

$$\text{MARGINAL COST (MC)} = \frac{\text{Total cost of } n \text{ units} - \text{Total cost of } n-1 \text{ units}}{1}$$

$$= \frac{\text{Change in Total Cost}}{\text{Change in Total Output}} = \frac{\Delta TC}{\Delta Q}$$

- ①
- | Production (units)   | 1  | 2   | 3   | 4   |
|----------------------|----|-----|-----|-----|
| Total Cost (TC) (Rs) | 80 | 150 | 235 | 330 |
- Above is the cost schedule of a firm  
 Its total fixed cost is Rs 50.  
 Find AVC and MC.

Solution

| Production | TC  | TFC | TVC<br>(TC - TFC) | AVC<br>(TVC/Q) | MC<br>(TC <sub>n</sub> - TC <sub>n-1</sub> ) |
|------------|-----|-----|-------------------|----------------|--|
| 1          | 80  | 50  | 30                | 30             | - = 80                                       |
| 2          | 150 | 50  | 100               | 50             | 150 - 80 = 70                                |
| 3          | 235 | 50  | 185               | 61.67          | 235 - 150 = 85                               |
| 4          | 330 | 50  | 280               | 70             | 330 - 235 = 95                               |

- ② Calculate TFC, TVC, AFC, AVC, ATC and MC  
 Output = 0, 1, 2, 3, 4, 5  
 TC = 180, 300, 400, 570, 720, 1000

| Output | TC   | TFC | TVC | ATC | AFC | AVC | MC  |
|--------|------|-----|-----|-----|-----|-----|-----|
| 0      | 180  | 180 | 0   | ∞   | ∞   | 0   | 180 |
| 1      | 300  | 180 | 120 | 300 | 180 | 120 | 120 |
| 2      | 400  | 180 | 220 | 200 | 90  | 110 | 100 |
| 3      | 570  | 180 | 330 | 170 | 60  | 110 | 110 |
| 4      | 720  | 180 | 540 | 180 | 45  | 135 | 210 |
| 5      | 1000 | 180 | 820 | 200 | 36  | 164 | 280 |

3. A firm's fixed cost is Rs 2000. Complete TVC, AVC, TC and ATC from the following information.

|          |      |      |      |      |      |      |      |
|----------|------|------|------|------|------|------|------|
| Output : | 1    | 2    | 3    | 4    | 5    | 6    | 7    |
| MC :     | 2000 | 1500 | 1200 | 1500 | 2000 | 2700 | 3500 |

Solution

| Output | MC   | TC    | TVC      | ATC     | AVC     |
|--------|------|-------|----------|---------|---------|
| 1      | 2000 | 4000  | 2000     | 2000    | 2000    |
| 2      | 1500 | 5500  | 3500     | 2750    | 1750    |
| 3      | 1200 | 6700  | 4699.98  | 2233.33 | 1566.66 |
| 4      | 1500 | 8200  | 6200     | 2050    | 1550    |
| 5      | 2000 | 10200 | 8200     | 2040    | 1640    |
| 6      | 2700 | 12900 | 10899.96 | 2150    | 1816.66 |
| 7      | 3500 | 16400 | 14399.98 | 2342.85 | 2057.14 |