

4. Nimbus, Inc., makes brooms and then sells them door-to-door. Here is the relationship between the number of workers and Nimbus's output during a given day:

Workers	Output	Marginal Product	Total Cost	Average Total Cost	Marginal Cost
0	0	0	200	∞	5
1	20	20	300	15	1.33
2	50	30	400	8	2.5
3	90	40	500	5.5	2
4	120	120	600	5	5
5	140	140	700	5	10
6	150	150	800	5.3	20
7	155	155	900	5.8	

- Fill in the column of marginal products. What pattern do you see? How might you explain it?
 - A worker costs \$100 a day, and the firm has fixed costs of \$200. Use this information to fill in the column for total cost.
 - Fill in the column for average total cost. (Recall that $ATC = TC/Q$.) What pattern do you see?
 - Now fill in the column for marginal cost. (Recall that $MC = \Delta TC / \Delta Q$.) What pattern do you see?
5. You are the chief financial officer for a firm that sells gaming consoles. Your firm has the following average-total-cost schedule:

Quantity	Average Total Cost
600 consoles	\$300
601	301

Your current level of production is 600 consoles, all of which have been sold. Someone calls, desperate to buy one of your consoles. The caller offers you \$550 for it. Should you accept the offer? Why or why not?

a

explain

There is a positive correlation between output and marginal product. It increases as output increases.

c

The average total cost is a U-shaped. ATC is less than MC as MC increases and more than MC as MC decreases.

d

The marginal is a U shaped. It intersects ATC at minimum point

⑤

$$TC = 600 \times 300$$

$$= 18000$$

At the output of 601

$$TC = 601 \times 300$$

$$= 18090$$

So should not sell at \$550

because $MC = 901$

$$MC = \frac{\Delta TC}{\Delta Q}$$

$$= 901$$