

HW#11 Due April 29, 2021

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		\$200	\$0	
		20			\$5
1	20		\$300	\$15	
		30			\$3.34
2	50		\$400	\$8	
		40			\$2.5
3	90		\$500	\$5.56	
		30			\$3.34
4	120		\$600	\$5	
		20			\$5
5	140		\$700	\$5	
		10			\$10
6	150		\$800	\$5.34	
		5			\$20
7	155		\$900	\$5.81	

- 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	TC (ATC · Q)
600 consoles	\$300	\$180,000
601	301	\$180,901

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?

4) a) When there is an addition of first 3 workers, the marginal product are increasing. and decreasing after the 4th worker. The law of diminishing marginal can be used to explain, as the number of outputs increase because the company hires more workers. However, the marginal products will decrease due to the fixed resources.

b) graph

c) At first, the average total cost is decreasing. It will decrease until it reaches the min. \$5 and quantity of 140 brooms.

d) At first, the marginal cost is decreasing until it reaches the min.

At \$ 2.5 and the quantity of 90 brooms. Then mc start to increase.

5) Not accept the offer. Since the total cost for producing is \$180,901, 1 more console cost \$ 901 so that is more than the caller which offer only \$550.