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	0	
		20			0
1	20		300	15	
		30			3.33
2	50		400	8	
		40			2.5
3	90		500	5.55	
		30			3.33
4	120		600	5	
		20			5
5	140		700	5	
		10			10
6	150		800	5.33	
		5			20
7	155		900	5.80	

a. Fill in the column of marginal products. What pattern do you see? How might you explain it?

b. 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.

c. Fill in the column for average total cost. (Recall that $ATC = TC/Q$.) What pattern do you see?

d. 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

180,000

\- 901 + 550

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?

No

4

a) The pattern of marginal product keep increasing until $40 and then keep decreasing after that.

For the explaination, At the beginning firm use few workers to produce output, so the margin keep increasing. On the other hand, As we continue producing more output, we have to use more workers and pay more wages. There fore, definitely, the cost of product will affect the marginal product that is why when we keep producing the marginal product decreases.

b) -

c) At the first period of production, we can produce many output with low costs, so average cost per 1 unit of output will be quite low. Although, when we keep producing more output, the products that we get keep reducing while cost for production increases constantly. Consequently, if we keep producing more, the average cost per 1 unit of output will be higher.

d) We will notice that marginal cost of 1 workers is high because out put increases only 20 units, but when we produce more and add 4 workers to 5 workers, we get great numbers of out put at this point marginal cost will be low. After that, as we keep producing with more workers, the out put increases more only few unit. So, with higher costs and few marginal products increasing, the marginal cost in the end keep increasing.

5 We should not accecpt this offer because if we produce more our total cost will increase from 180,000 to 180,901 which mean marginal cost will be 901, but we get more revenue only 550.

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