

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

- 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?

4a) at workers 1 the Marginal product is 20 and when the worker is increase to 2 workers the marginal product is 30 it continually increase until at 3 workers and marginal product is 40.

Marginal start to decrease after the 4th worker. This also called the law of diminishing
The more workers hires the company's marginal will decrease.

c) The average total cost first increase from 0 to 15 and then start decreasing at the output of 20 and continue decrease until reaches the minimum at \$5 where the output is 140
After that the average total cost start increasing

D) The marginal cost is start decreasing at the beginning from 5 to 2.5 where the output is 90, After that the marginal cost start to increase from 2.5 to 20

5) We shouldn't accept this offer because the total cost of the 601 console = $601 \times 301 = \$180,901$ that mean if we need to produce 1 more console the cost is \$901 but the customer willing to pay is \$550.