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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	DNE ($\frac{200}{0}$) $\frac{200}{0}$	
		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	

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	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.) Marginal product increasing for the first 3 workers. However the marginal product decreasing after 4^{th} additional worker. This circumstance called " the diminishing in marginal return as the company hired more worker. That is, the firm receives less marginal benefits as worker increase because of fixed resources.

C.) The average total cost has decreasing from the beginning ultil it reach minimum of 5 $ at quantity 140 units of brooms. from this quantity, if the firm decide to produce more than 140 units, then the average total cost will increase.

D.) The marginal cost is decreasing from the beginning until it reach minimum of 2.5 $ at the quantity of 50 units of brooms. If the firm decide to produce more, the additional unit after the first 50 units, the marginal cost will increasing.

5.) I will not accept the offer, due to the fact that the total cost of 601 units of consoles is 180,901 $, that's 901 $ is the cost of producing 601^{th} unit. But the offer is only worth 550$.