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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	0	
		20	100		5
1	20		300	15	
		30	100		3.33
2	50		400	8	
		40	100		2.5
3	90		500	5.55	
		30	100		3.33
4	120		600	5	
		20	100		5
5	140		700	5	
		10	100		10
6	150		800	5.33	
		5	100		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		Total Cost
600 consoles	x	$300	=	$180,000
601	x	$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) The marginal product increasing at the beginning until Nimbus Inc. has 3 workers, then the marginal product decrease afterward. It rise at first, then declines because of diminishing marginal product where add more worker but have less additional output.

c) Average total cost has U shaped. When quantity is low the average total cost (cost per 1 unit of product) is high. As quantity rise the average total cost decrease. Then when the production reach at such point, the average total cost will rise again.

d) Marginal cost is also a U shaped. It also decrease until such point and increase at last due to diminishing marginal product.

5. To cost to produce 600 consoles is $180,000 and the cost to produce 601 consoles is $180,901.
The given price is 550 while the cost for 1 additional console is $901.
So the offer should not be accepted.