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	

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) The marginal products are increasing at the addition of first 3 workers and decreasing after the 4th worker. This can be explained by the law of diminishing marginal returns as the company hires more workers the number of outputs increases due to the specialization of workers nontheless, the additional output or marginal products will eventually decrease because of fixed output or marginal products will eventually decrease because of fixed resources

c) The average total cost is decreasing at first until it reaches the minimum of $5 at the quatity of 140 brooms, then the ATC start to increase

d) The marginal cost is also decreasing at first until it reaches the minimum of $ 2.5 at the quantity of 90 brooms then the mc start to increase and intersect ATC at its minimum of $5

5. The offer should not be accepted because the total cost for producing the 501st console is $ 180,901, 1 more console costs $ 901 and the caller only offers $550 for it.