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HW#10 Due November 10, 2020

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: $\frac{TC}{Q}$ $\frac{\Delta TC}{\Delta Q}$

TVC = 100
TFC = 200

Workers	Output	Marginal Product	Total Cost TC = TFC+TVC	Average Total Cost	Marginal Cost
L	Q				
0	0		200	-	
		20			5
1	20		300	15	
		30			3.33
2	50		400	8	
		40			2.5
3	90		500	5.56	
		30			3.33
4	120		600	5	
		20			5
5	140		700	5	
		10			10
6	150		800	5.3	
		5			20
7	155		900	5.8	

$\frac{300-200}{20-0} = 5$

$\frac{400-300}{50-30} = \frac{100}{30}$

$\frac{500-400}{90-50} = \frac{100}{90}$

$\frac{100}{30}$

$\frac{100}{20}$

$\frac{100}{10}$

$\frac{100}{5} = 20$

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?

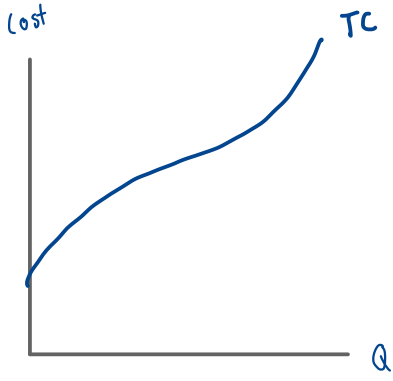
d. Now fill in the column for marginal cost. (Recall that $MC = \Delta TC/\Delta Q$.) What pattern do you see?

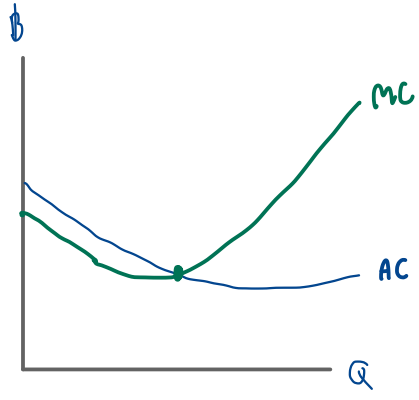
5. You are the chief financial officer for a firm that sells gaming consoles. Your firm has the following average-total-cost schedule:

Quantity	Average Total Cost
600 consoles	$300
601	301

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.





AC > MC	AC is decreasing.
MC = AC	AC is min
MC > AC	AC is increasing

AC is more than MC at the begining but still decreasing. when MC equals to AC is when AC has the minimum point. when MC is tangent to AC. Lastly, MC is more than AC in in the end but still, AC is increasing at decreasing rate.

5. $MC(Q) = AC(Q) + Q$

$MC(Q) = 301 + 601$

$MC(Q) = 901$

$MC(Q) = 550 + 601$

$MC(Q) = 1{,}151$

No, because the MC of 550 ฿ is 1,151 which is more than 901. It means the change in new offer will be effected to the cost much. It's not worth to take this offer as long as MC line is steeper than the old one at 901.