HW#10 6304640102

4.

Workers	Output	Marginal Product	Total Cost	Average Total Cost	Marginal Cost
0	0		200	-	
		0			5
1	20		300	15	
		20			3.33
2	50		400	8	
		30			2.5
3	90		500	5.55	
		40			3.33
4	120		600	5	
		30			5
5	140		700	5	
		20			10
6	150		800	5.33	
		10			20
7	155		900	5.8	

a.) Marginal product was continually increasing until same point then start to decrease. This situation when marginal product is at maximum (inflection point). Then, as we can see the marginal product was starting to increase which mean that the output of adding more workers is not the same anymore because the workers is getting too crowded.

b.) Since $TC(Q) = TFC(Q) + TVC(Q)$

Total Cost — Total fixed Cost — Total Variable cost (wL)

w: worker, L: Labor at price

Then, at $w=0$: $TC(0) = 200 + (0)(100)$

$= 200$ → then keep calculating...

c.) $ATC = \frac{TC}{Q}$ when Q → output

at $TC = 200$, $Q = 0 \Rightarrow ATC = \frac{200}{0}$ = undefined

at $TC = 300$, $Q = 20 \Rightarrow ATC = \frac{300}{20} = 15$

then keep calculating...

After calculating we will see that the average cost was first decrease then increase.

d.) $MC = \frac{\Delta TC}{\Delta Q}$ Q → output

at $Q = 0$, $\Delta TC = 300 - 200$, $\Delta Q = 20 - 0$ } $MC = \frac{100}{20} = 5$

then keep calculating...

After calculating we will see that the marginal cost is the same shape as average total cost

(5) First in normal situation if we assumely calculate the total cost of consoles

By 600 consoles at 300 = 180,000 $

601 consoles at 301 = 180,901 $

we will see that 180,901 − 180,000 = 901 $

So it means that the more average total cost increase, the more cost.

Then we shall not take the offer because if will increase the average total cost and the less customers would'nt buy the consoles.