HW#11 Due November 24, 2020

3. Consider total cost and total revenue given in the following table:

Quantity	0	1	2	3	4	5	6	7
Total cost	$8	9	10	11	13	19	27	37
Total revenue	$0	8	16	24	32	40	48	56

   a. Calculate profit for each quantity. How much should the firm produce to maximize profit?

   b. Calculate marginal revenue and marginal cost for each quantity. Graph them. (*Hint*: Put the points between whole numbers. For example, the marginal cost between 2 and 3 should be graphed at $2\frac{1}{2}$.) At what quantity do these curves cross? How does this relate to your answer to part (a)?

   c. Can you tell whether this firm is in a competitive industry? If so, can you tell whether the industry is in a long-run equilibrium?

7. A profit-maximizing firm in a competitive market is currently producing 100 units of output. It has average revenue of $10, average total cost of $8, and fixed cost of $200.

   a. What is its profit?

   b. What is its marginal cost?

   c. What is its average variable cost?

   d. Is the efficient scale of the firm more than, less than, or exactly 100 units?

i.e. Is AC at its minimum?

3.a)

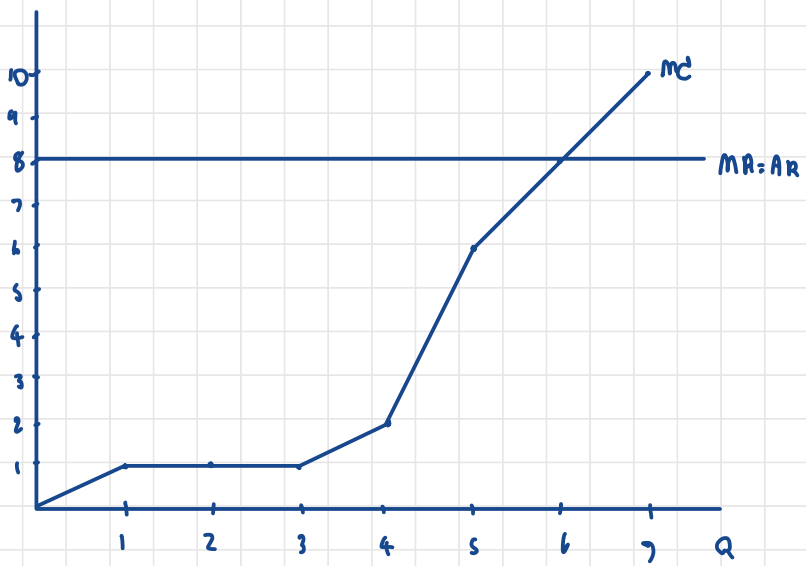
Q	0	1	2	3	4	5	6	7
Profit	-8	-1	6	13	19	21	21	19

Firm should produce 6 units inorder to maximize profit at 21

3.b) $MR = \frac{\Delta TR}{\Delta Q}$ or $\frac{d}{dQ} TR$

$MC = \frac{\Delta TC}{\Delta Q}$ or $\frac{d}{dQ} TC$

Quantity	0	1	2	3	4	5	6	7
MC		1	1	1	2	6	8	10
MR		8	8	8	8	8	8	8



MC = MR at quantity 6 which is the equilibrium

3 C) This firm is in a competitive industy. This firm isn't in the long-run equilibrium because it has fixed cost

7.a) Profit : (Avg. Rev. - Avg. Costs) x Quantity

: (10 - 8) x 100 units

Profit = 200 $

7.b) Marginal Costs is equal to 2 $

7.c) Average variable cost = $\frac{\text{Total cost - Total fixed cost}}{\text{Quantity}}$

$= \frac{800 - 200}{100} = 6$

Average variable cost is equal to 6 $

7.d) AC will be at its minimum when MC = AC but in this case MC is 10 $ and AC is 8 $. So, AC is not at its minimum.