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
	-8	-1	6	13	19	21	21	19

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

5.5

   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?

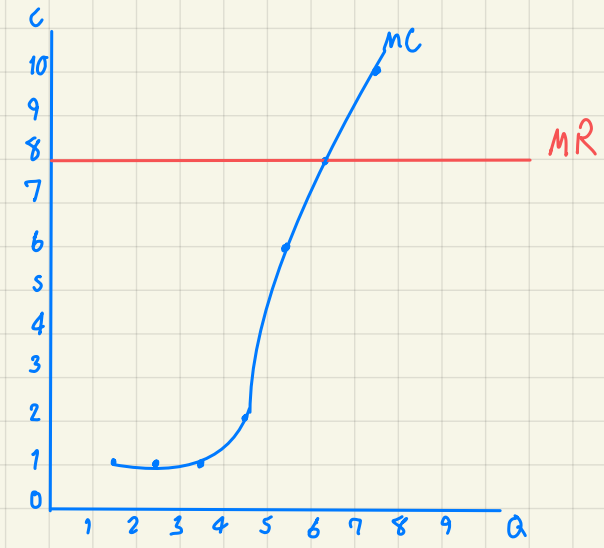
i.e. Is AC at its minimum?

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

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)?

MR = 8

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



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?

Yes, this firm is in a competitive industry because the price is constant and also in the long run equilibrium because of no fixed

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? 6

b. What is its marginal cost? 10

c. What is its average variable cost? 6

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

i.e. Is AC at its minimum? less than 100

$ATC = \frac{FC + VC}{output}$

$\frac{100}{10} = 10$

P: 10

Q = 100 TR = 1000 TC = 800 TVC = 600 TFC = 200

MR = 10 MC = 10 AVC = 6