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

MR = $\frac{\Delta TR}{\Delta Q}$ MC = $\frac{\Delta TC}{\Delta Q}$ π = TR − TC

MC: 1, 1, 2, 6, 8, 10 — MR: 8, 8, 8, 8, 8, 8 — π: −8, −1, 6, 13, 19, 21, 21, 19

a. Calculate profit for each quantity. How much should the firm produce to maximize profit?
↳ 5 or 6

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)?
↳ 6 ↳ this quantity from 5 to 6 that is MR equal to MC. so it is maximizing profit.

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? this firm is perfectly competitive market because price is constant. And that is long-run because there is not fixed cost.

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.

TR = 1000 TC = 800 AFC = $\frac{200}{100} = 2$

a. What is its profit? π = TR − TC = 1000 − 800 = 200

b. What is its marginal cost? = $\frac{\Delta TC}{\Delta Q} = \frac{800}{100} = 8$

c. What is its average variable cost? ATC − AVC = 8 − 2 = 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

6. b)