

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

	Profit	-8	-1	6	13	19	21	21	19
	Quantity	0	1	2	3	4	5	6	7
MR = all \$	Total cost	\$8	9	10	11	13	19	27	37
	Total revenue	\$0	8	16	24	32	40	48	56
	MC		1	1	1	2	6	8	10

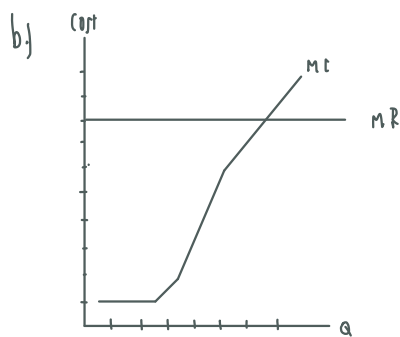
- Calculate profit for each quantity. How much should the firm produce to maximize profit?
- Calculate marginal revenue and marginal cost for each quantity. Graph them. (Hint: Put the points between whole numbers. For example, the marginal cost between 2 and 3 should be graphed at $2\frac{1}{2}$.) At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

- What is its profit?
- What is its marginal cost?
- What is its average variable cost?
- Is the efficient scale of the firm more than, less than, or exactly 100 units?

i.e. Is AC at its minimum?

a) firm should produce at 5 or 6 Quantity



The MC and MR cross between 5 and 6 unit of output
The maximizing profit is equal to the marginal cost

c.) The firm is in competitive industry because the MR are at same level in every output
However, this industry is not in the long-run equilibrium due to it still have the profit to attract new firm to enter the market

$$\text{Profit} = (P - ATC) \times Q$$

$$= (10 - 8) \times 100$$

$$= \$200$$

b) 10

d.) the efficient level of firm is less than 100 unit

$$c) AFC = \frac{TFC}{Q}$$

$$= \frac{200}{100} = 2$$