

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

- 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?

Question 3

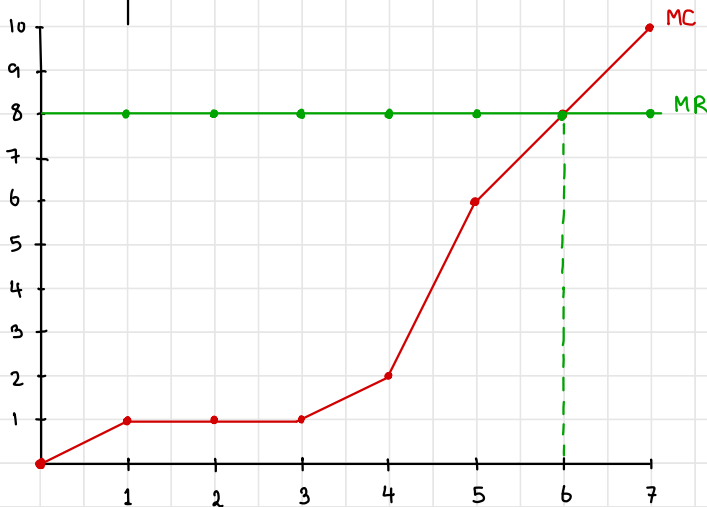
a) Calculate profit for each quantity

Quantity	0	1	2	3	4	5	6	7
Profit (\$)		-8	-1	6	13	19	21	19

Ans: The firm should produce 6 outputs to maximize profit.

b) Marginal Rev. and Marginal Cost. with Graph

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



Ans: The quantity that cross two graph is 6 Therefore, this answer relates to answer on part (a) that at quantity 6 is the maximum profit for the firm because

1. MC is equal to MR
2. Slope of MC is greater than MR

- c) Ans: This firm is in a competitive industry. This firm isn't in the long-run equilibrium because it has fixed costs.

Question 7

a) Profit = (Avg. Rev. - Avg. Costs) * Quantity
= (10 - 8) * 100 units
Profit = 200 \$

b) Marginal Costs is equal to 10\$ because in order to maximize profit $MR=AR=MC$

c) Average variable cost = $\frac{\text{Total cost} - \text{Total fixed cost}}{\text{Quantity}}$
= $\frac{800 - 200}{100} = 6 \$$

Average variable cost is equal to 6\$

d) Ac will be at its minimum when AC equals to MC, but in this case MC is 10\$ and AC is 8\$. So, AC is not at its minimum, not efficient