

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? *4 unit*
- 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? *This industry is competitive since marginal revenue is the same for each quantity. The industry is not in long-run, since profit is positive.*

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.

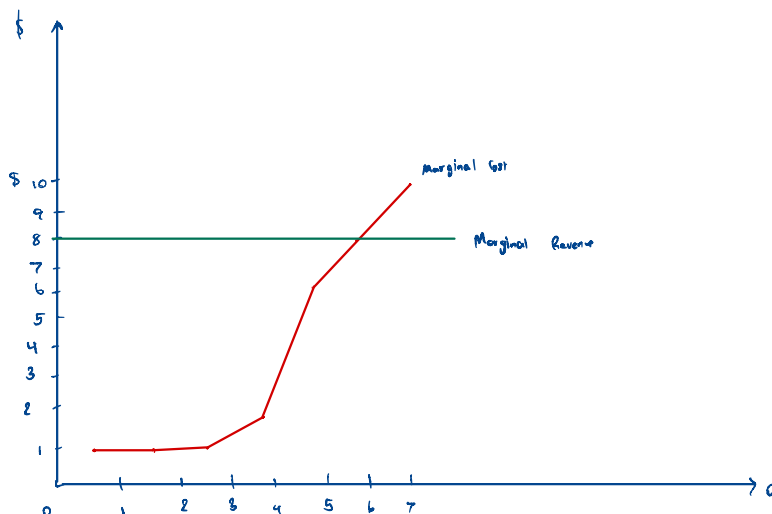
- What is its profit? *$(10-8) \cdot 100 = 200$*
- What is its marginal cost? *MC of the firm is 10\$ per unit.*
- What is its average variable cost? *$\$8 - \frac{200}{100} = 4$*
- Is the efficient scale of the firm more than, less than, or exactly 100 units?

i.e. Is AC at its minimum?

1

The efficient output of the firm is less than the existing output.

2. b



The curves cross at a quantity between 5 and 6 units, yielding the same answer as in part (a).