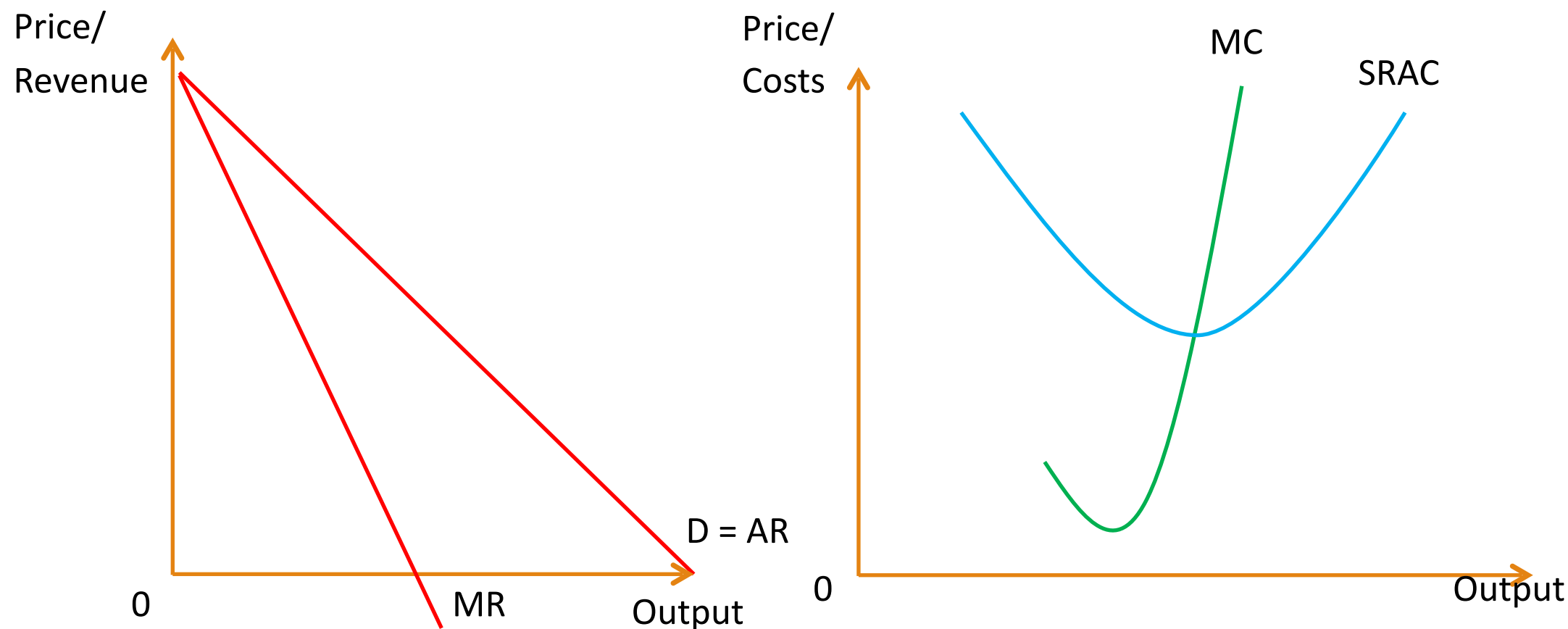# Profit Maximisation, Profit & Loss

GCE A-LEVEL & IB ECONOMICS

Combining Revenues and Costs
(Imperfect Competition)
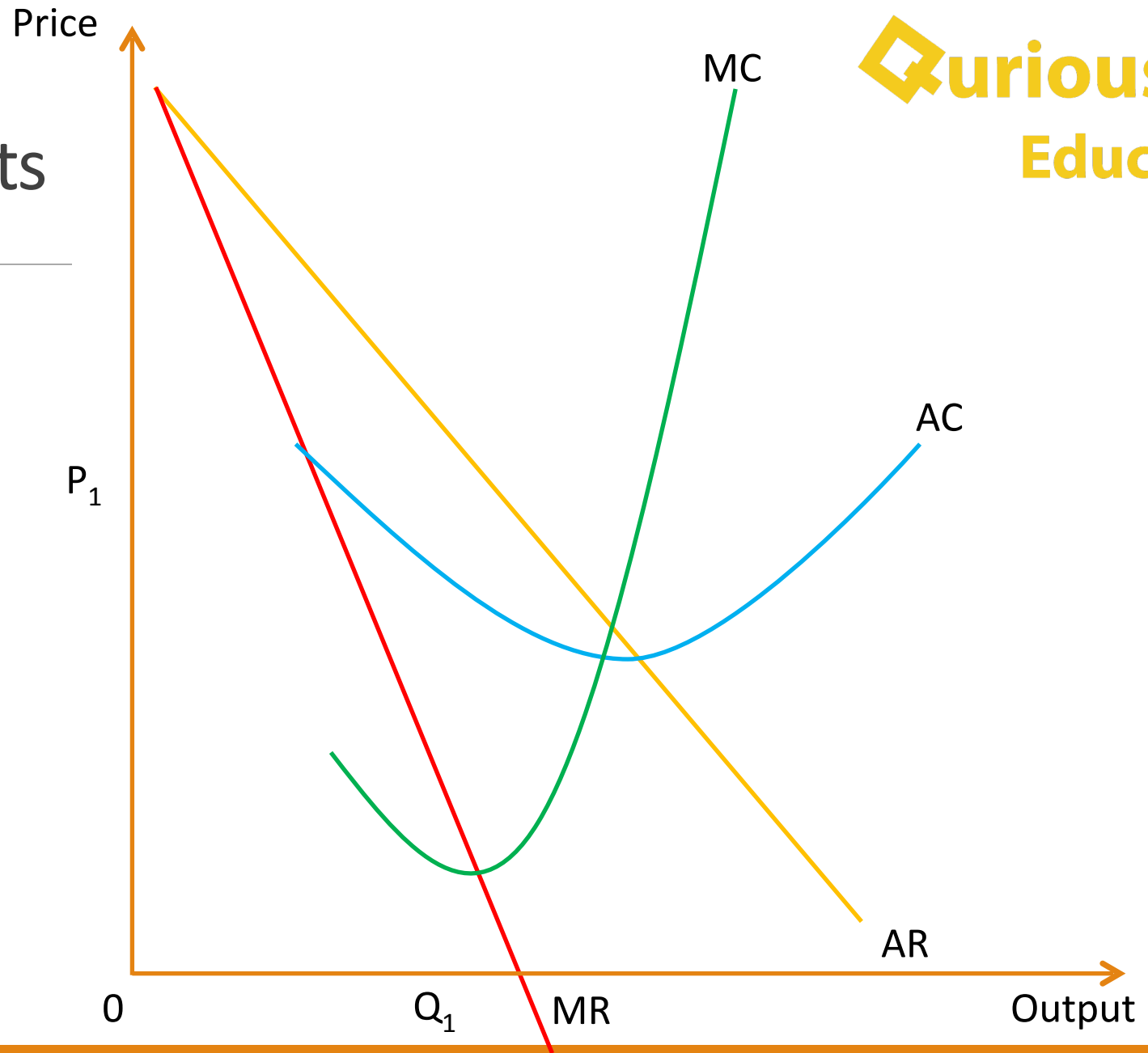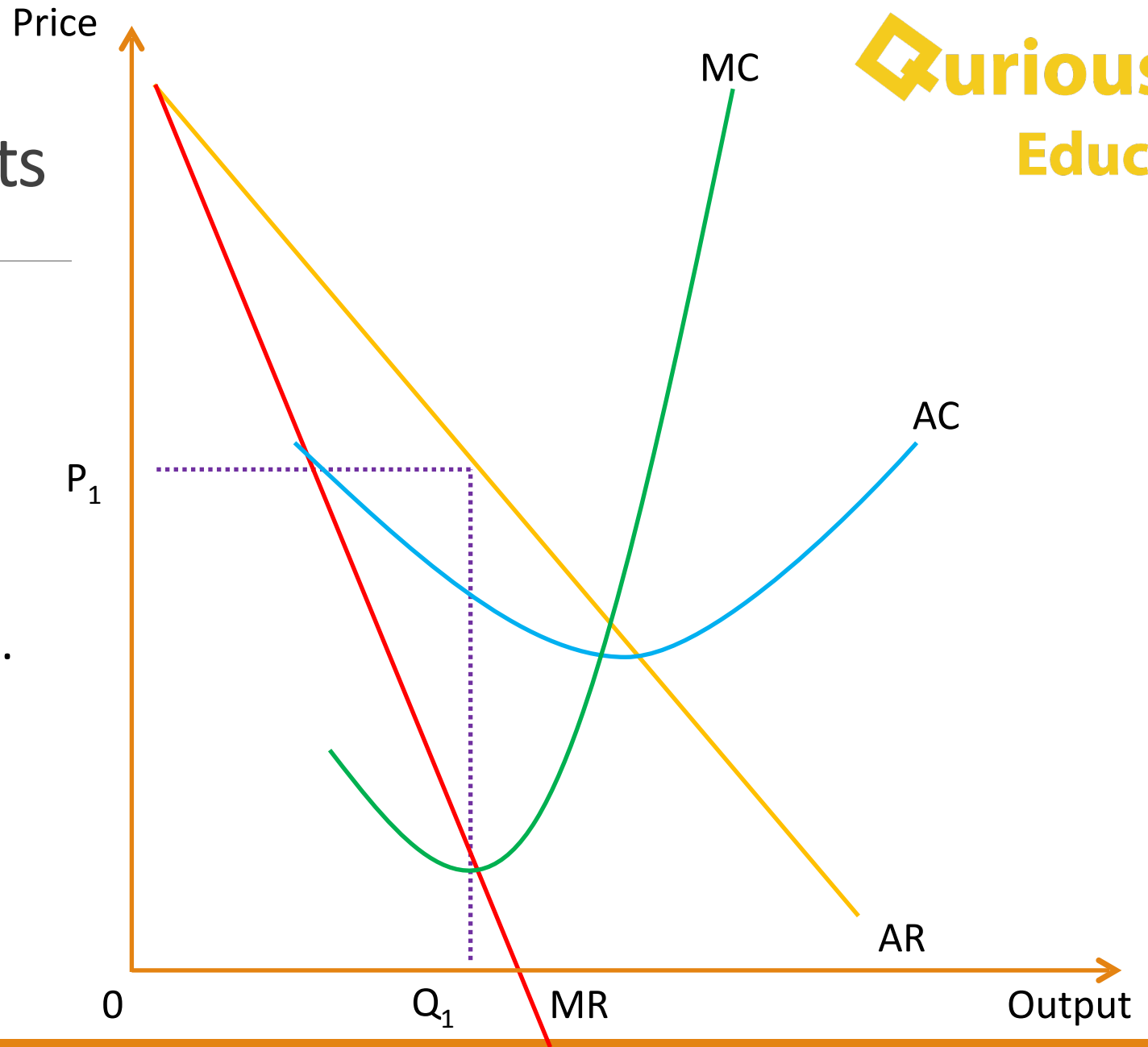
A New Diagram is Born!

Combining Revenues and Costs
(Imperfect Competition)

But where will the firm produce?

Combining Revenues and Costs
(Imperfect Competition)

The firm will produce at Q1 to maximize profits where MC=MR. Why?

Combining Revenues and Costs
(Imperfect Competition)

When the firm is producing at Q1, where MR>MC, the firm will produce more because producing an additional unit will grant a revenue of 10 and a cost of 4.
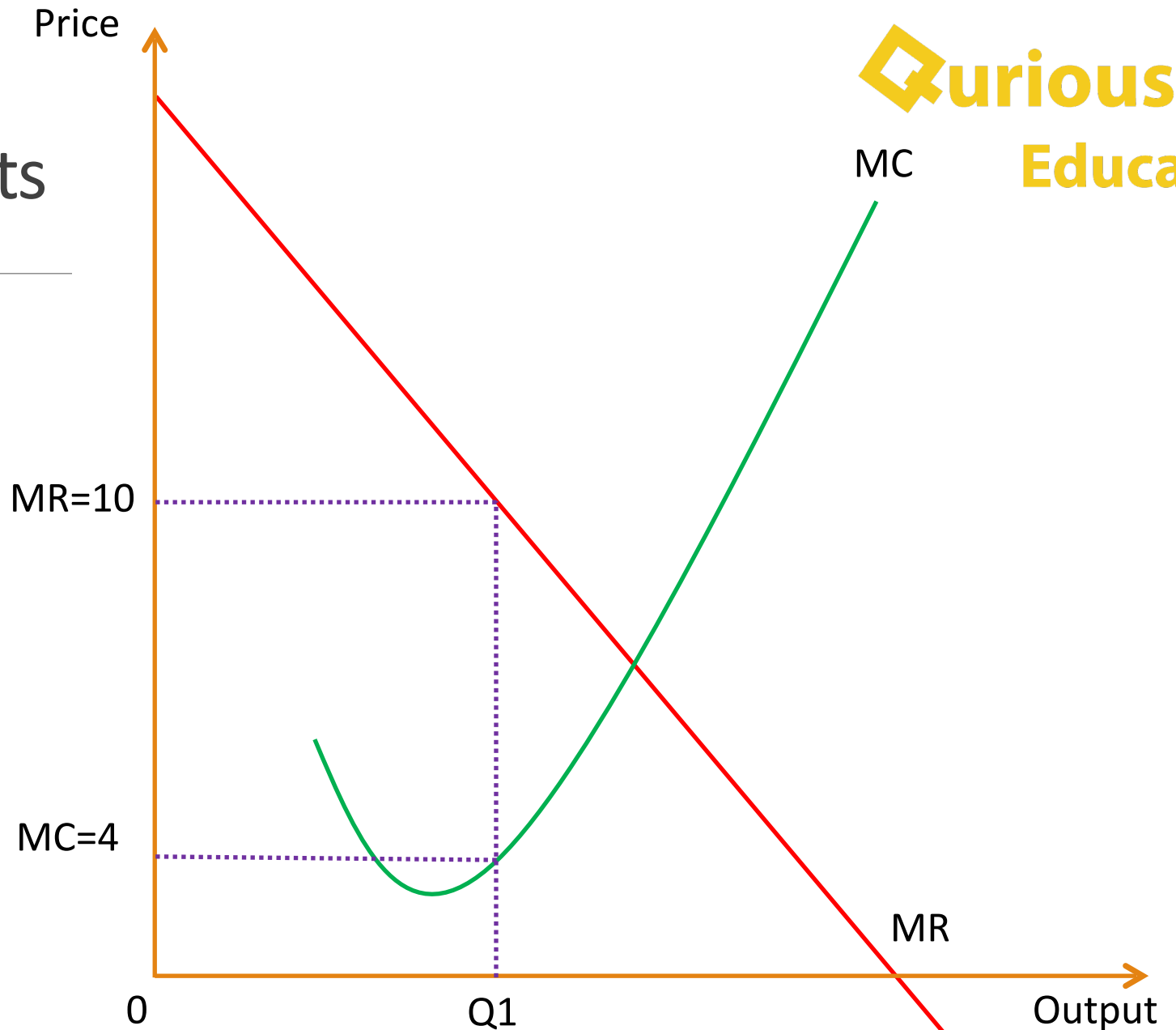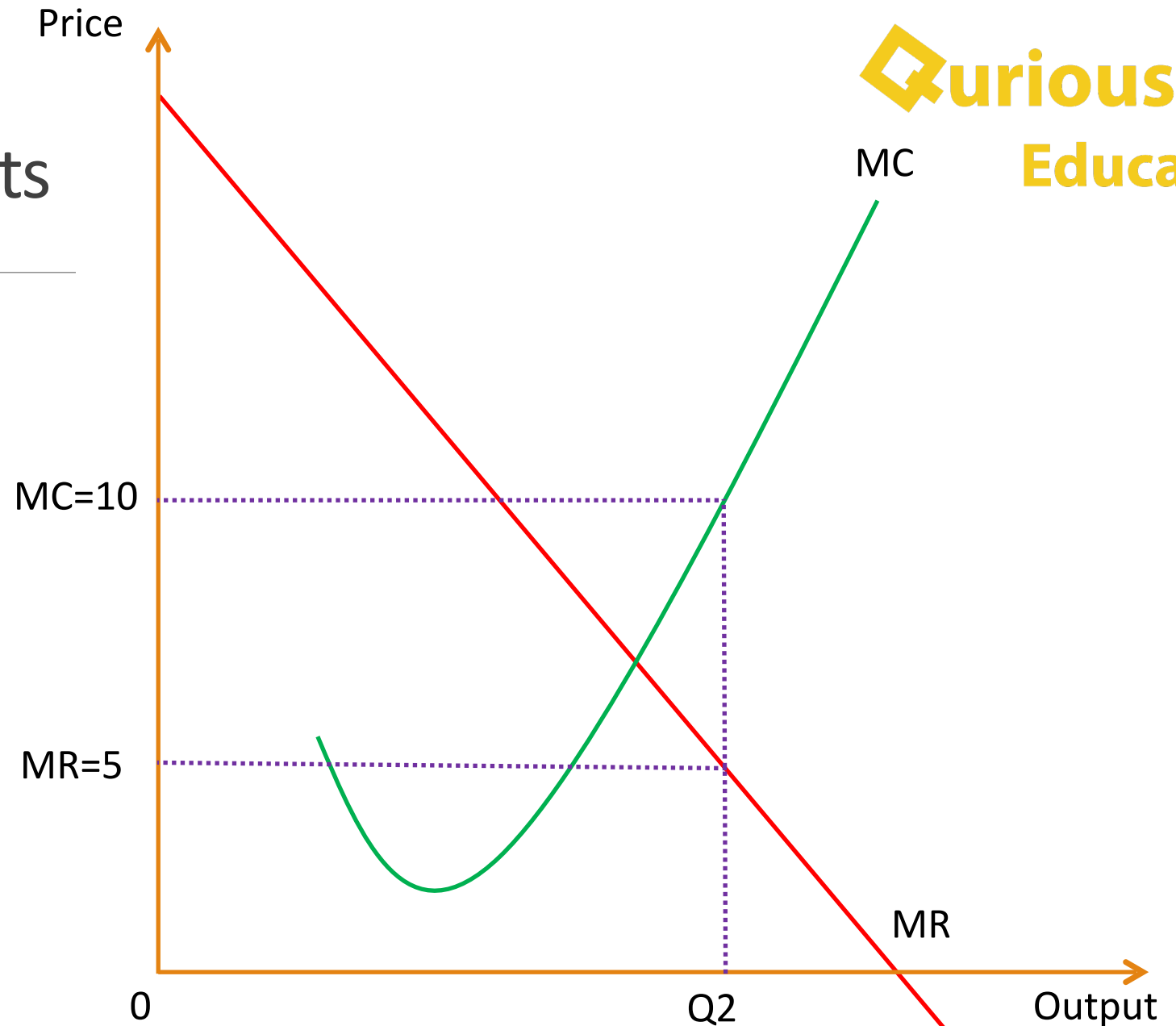
This means it will grant a profit of: 10 - 4 = 6

Combining Revenues and Costs
(Imperfect Competition)

When the firm is producing at Q2, where MC>MR, the firm will produce less because producing an additional unit will grant a cost of 10 and a revenue of 5.
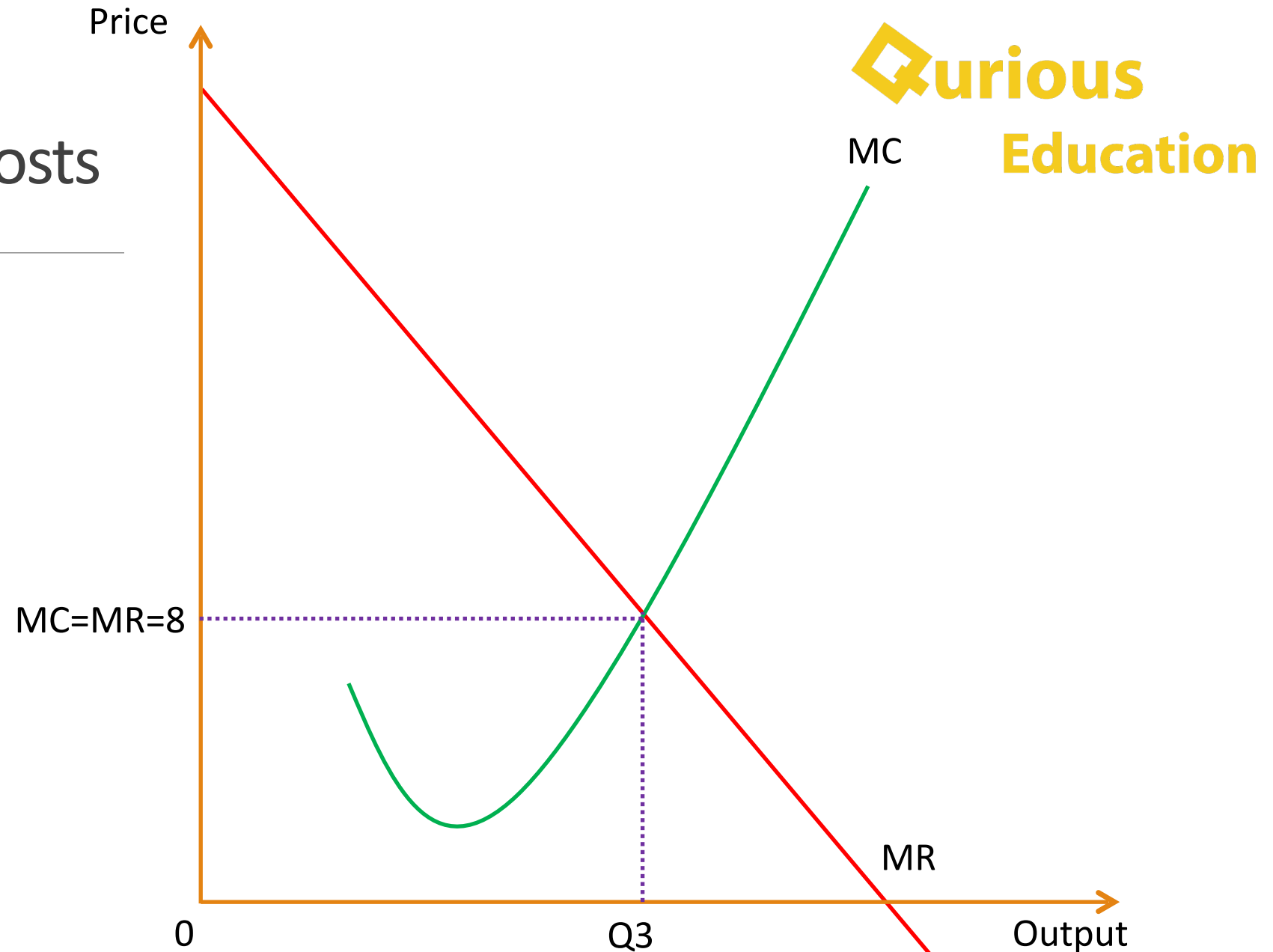
This means it will grant a negative profit (loss) of:
5 - 10 = -5

Combining Revenues and Costs
(Imperfect Competition)

Hence, when producing at Q3 where MC=MR, the firm will gain 8 – 8 = 0 additional profit by producing one more unit of output.

This is where profits are maximized.

Combining Revenues and Costs
(Perfect Competition)

What about when at perfect competition?

Note that a firm will only earn a max profit of 0 in perfect competition, just enough to stay in the market (as otherwise other firms will enter and compete away profits). Hence if they decrease their price they will incur a loss and exit the market.
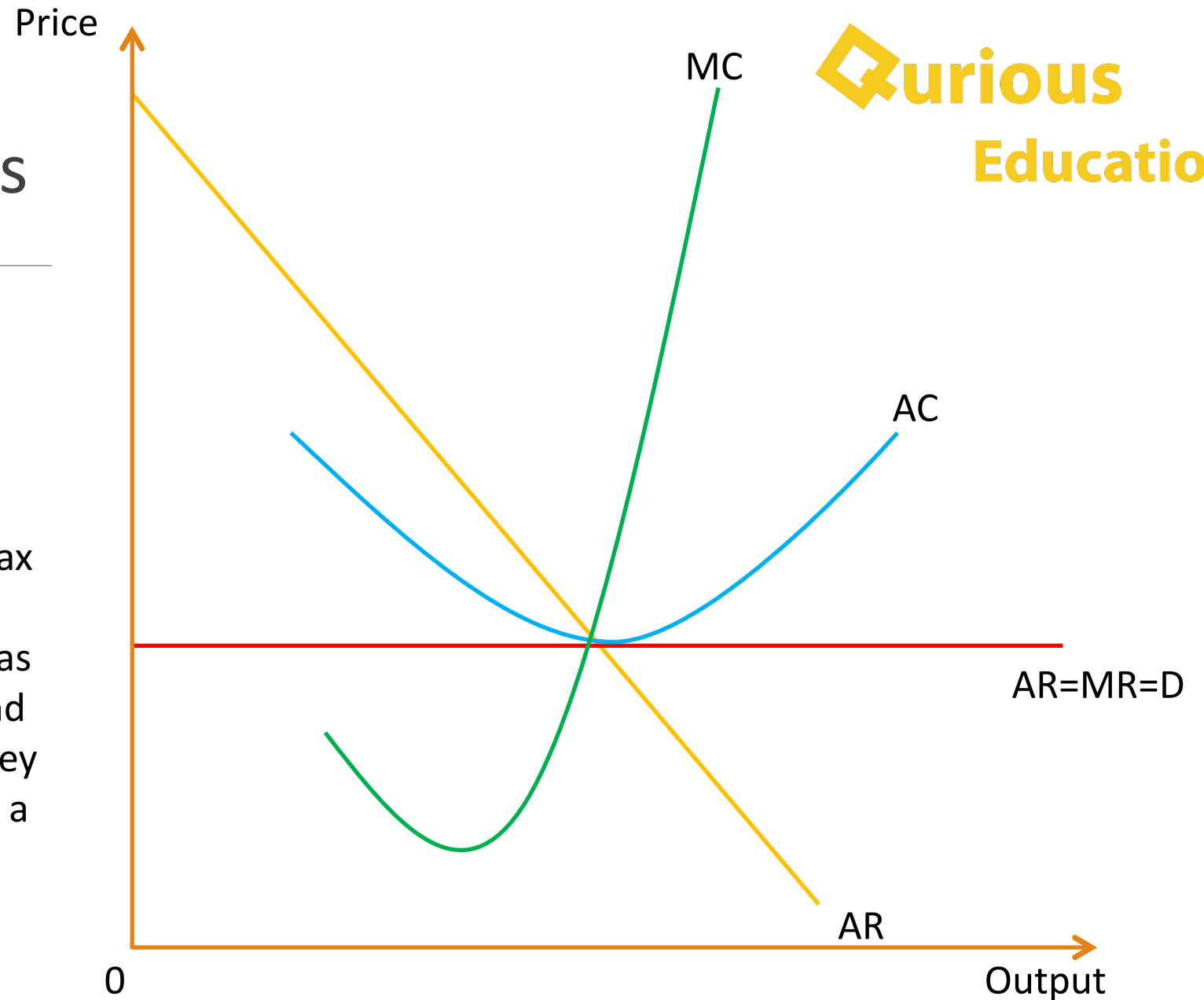
Combining Revenues and Costs
(Perfect Competition)

In perfect competition, AR, MR and Price is constant.

Complete the table to understand when profits are maximized

Output	MR	MC	Change in profit	Total Profit
0	0	0	-	-
1	20	13	7	-35
2	20	10		
3	20	7		
4	20	15		
5	20	20		
6	20	23		
7	20	28		
8	20	34		
9	20	40		

Combining Revenues and Costs
(Perfect Competition)

In perfect competition, AR, MR and Price is constant.

Complete the table to understand when profits are maximized

| Output	MR	MC	Change in profit	Total Profit
0	0	0	-	-
1	20	13	7	-35
2	20	10	10	-28
3	20	7	13	-18
4	20	15	5	-5
5	20	20	0	0
6	20	23	-3	-3
7	20	28	-8	-11
8	20	34	-14	-25
9	20	40	-20	-45

Revenue, Costs and Profit

Total Revenues = Price x Quantity = Area under AR curve

Total Costs = Price x Average Cost = Area under AC curve

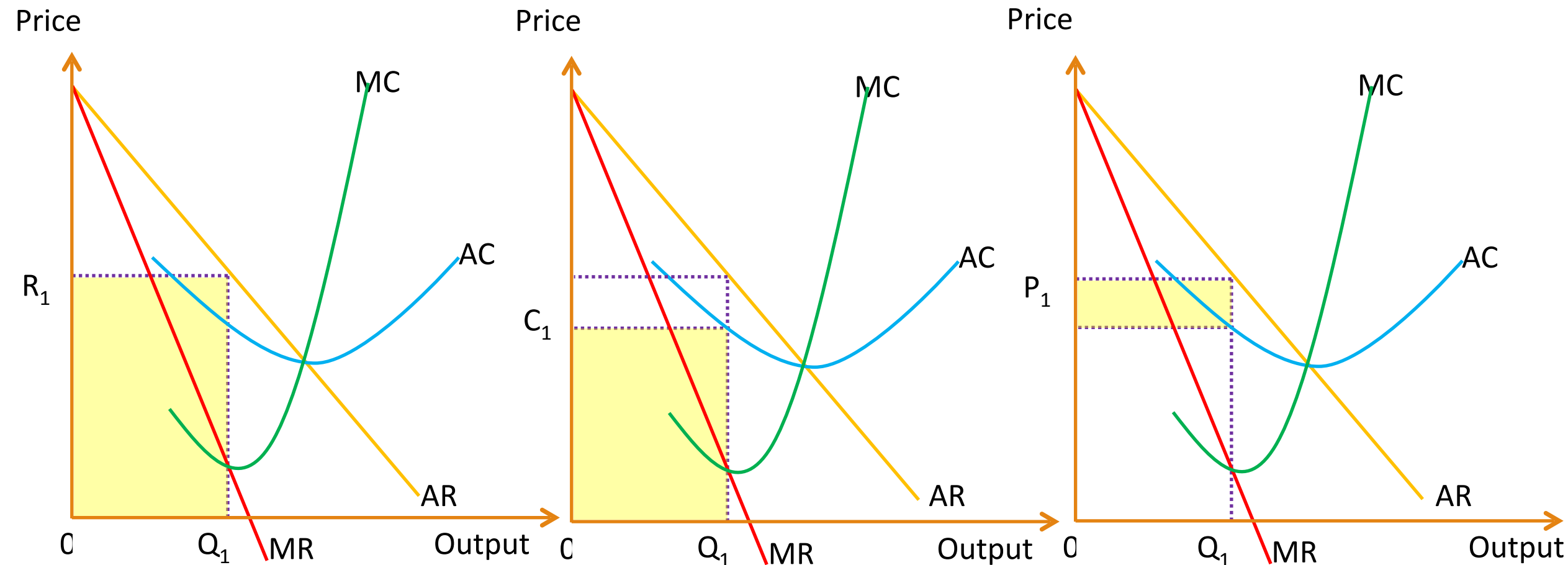Total Profits = Total Revenues – Total Costs = Difference in Area

Which Area Represent Total Profit, Cost and Revenue?
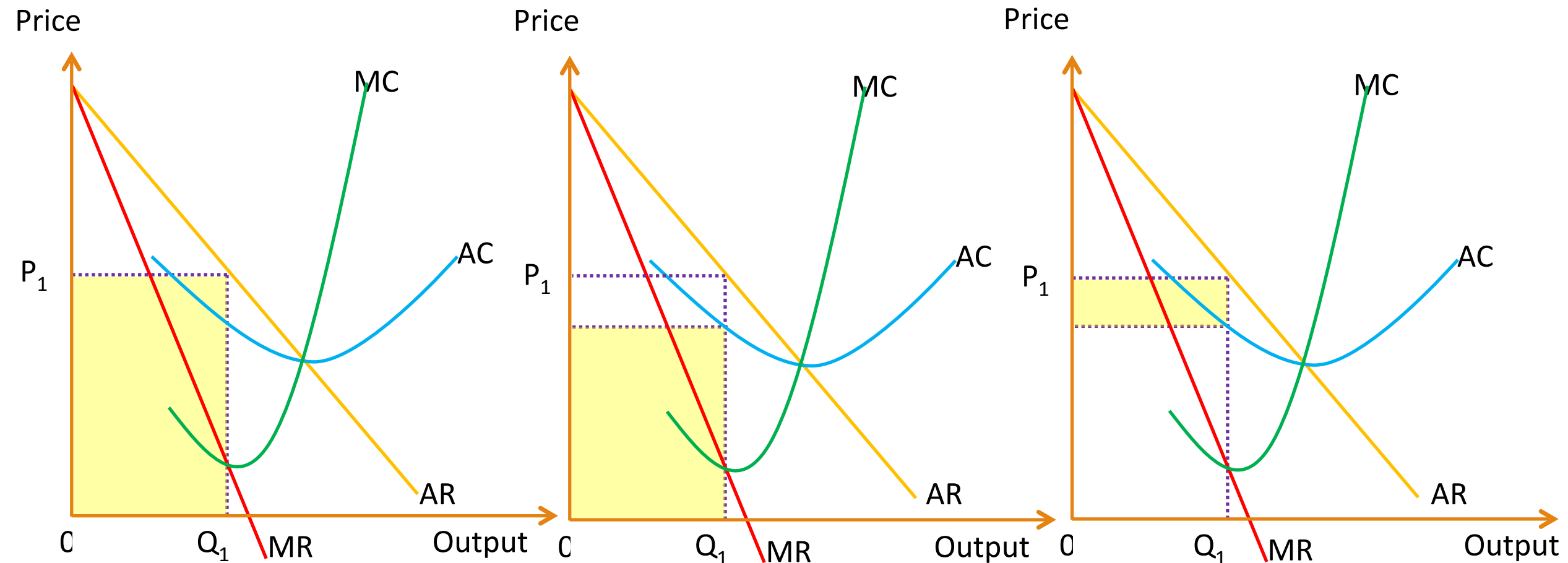
Normal Profits

When a firm is earning **normal profits**, they make the minimum amount of profits required to stay in the industry. This means revenues received are able to cover all their costs, including opportunity cost.

This is slightly different to the business concept of breaking even. Note that opportunity cost is the value of the next best option forgone.

Normal Profits

For example, if you invest your entire savings in an underground casino, which is a risky business, you would perhaps expect to earn $10,000 in profit monthly. Your second best option may be to use those savings for a less risky pub, which is expected to earn $3,000 profit per month.

In this case, making normal profits for your casino will mean making $3,000 profit per month, after all your operational costs have been deducted from your revenues (incl. salaries). This is to cover your opportunity cost of using your savings to operate another business using your savings/time as an entrepreneur.

Normal Profits

If you make less than $3,000 profit per month, you would be making a loss, leaving the casino industry to open a pub instead.

Hence, you can see the level of normal profits for each business depends on the risk of the business and the opportunity cost which can vary for individuals/investors/entrepreneurs.
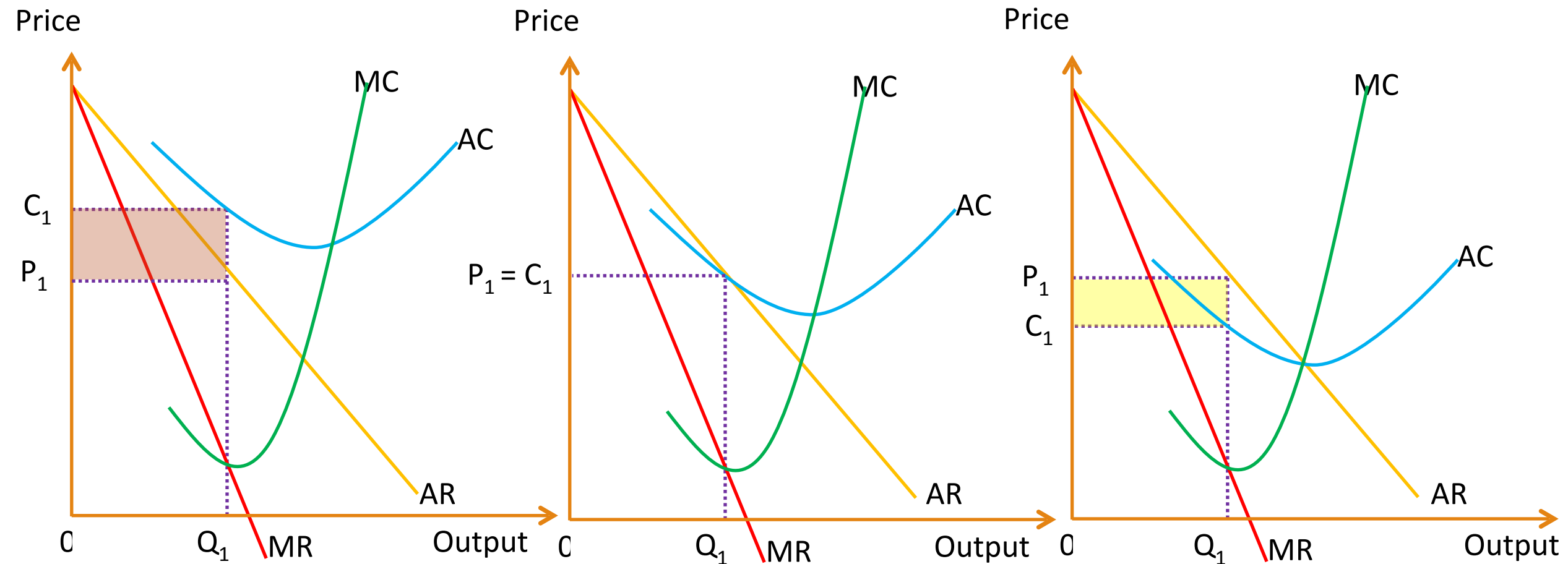
Supernormal Profits, Loss

Supernormal profit is making any amount of profits higher than normal profits. An industry with an opportunity to create supernormal profit will attract new entrants and more competition.

However whether new entrants can enter depends on the barriers to entry of the industry. Higher barriers to entry mean less competition, higher market concentration (i.e. less firms dominating the market), higher market share for firms and more supernormal profits; vice versa.

Losses are made when total costs are higher than total revenues, which causes a firm to exit the industry. Depending on how the loss incurred, the firm may exit immediately or after a period of time.
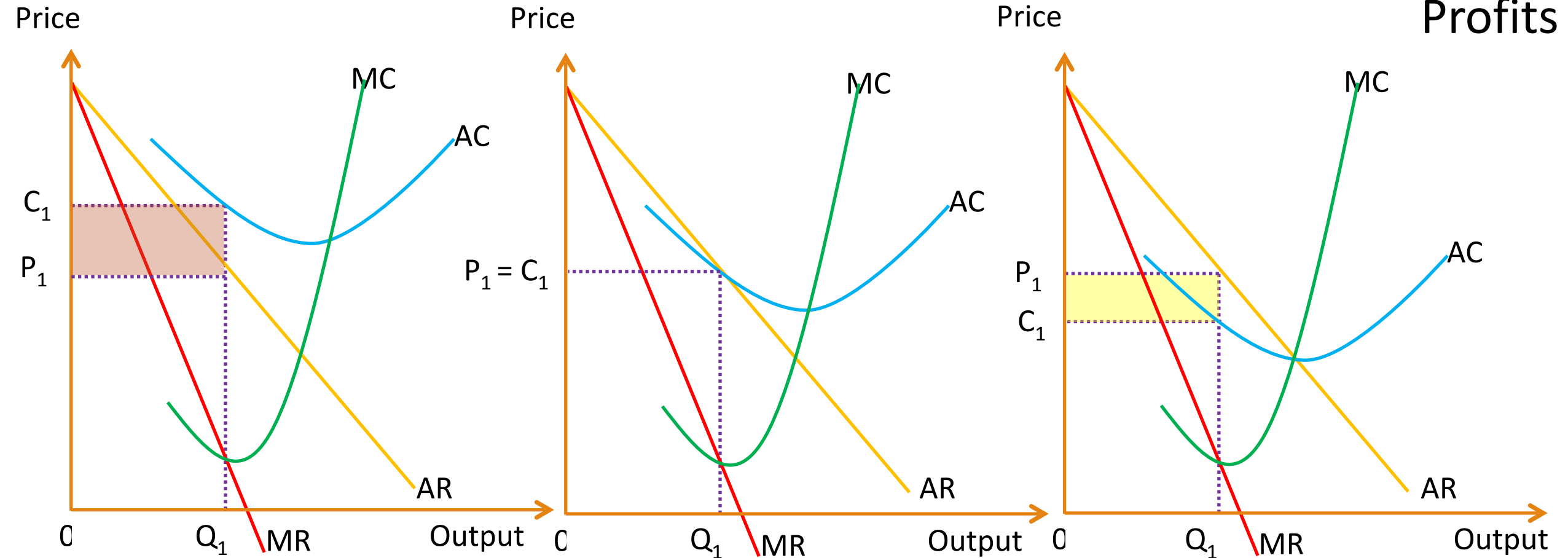
Which Diagrams Represent Which?

When Will a Firm Exit the Market? Shut-down point

In the long run, a firm will exit the market as long as they are making a loss shown by having a higher average cost than their price in the diagram (AC > P or AC/TC < AR/TR)

However, in the short run, a firm will continue to operate as long as average variable costs are lower than their price (AVC < P), even if they are making a loss.

Why? This is because by producing one more unit, the firm will earn more revenues in the short term (P – AVC) to reduce the overall loss (Variable Cost + Fixed Cost)
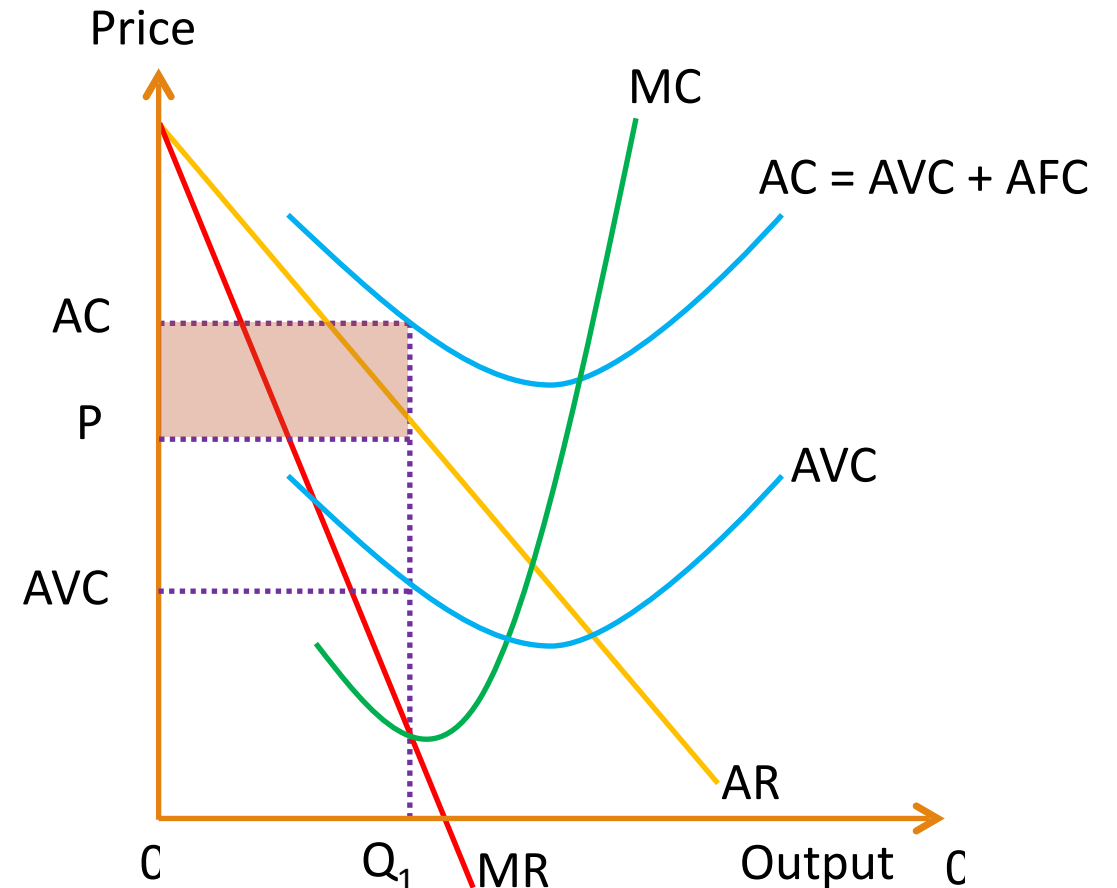
Quick Questions

- At what output will the firm choose to produce to maximize profits?

- Explain how supernormal profits is different from normal profits

- When will the firm shut down in the long run?

- When will the firm shut down in the short run? Explain why.

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