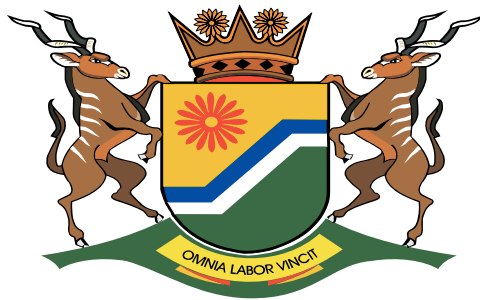




education

MPUMALANGA PROVINCE
REPUBLIC OF SOUTH AFRICA

ECONOMICS NOTES

TOPIC: EFFECTS OF COSTS AND REVENUE

GRADE 11

YEAR: 2022

TOPIC: EFFECTS OF COSTS AND REVENUE**1. OBJECTIVES OF BUSINESSES**

- In the market economy any business' main objective is to make the highest possible profit (maximise profit). Other objectives can be to increase sales and to increase market share
- Profit is the difference between the firm's total revenue and the total costs of production
- Accountants and Economists counts profit differently. For accountant's profit is the difference between total revenue and its **explicit** costs of production.
- This means to determine accounting profit only the costs related to production are considered e.g. raw material, wages and salaries, transport, building, water electricity, administration etc. These costs are called explicit costs
- Economists consider both explicit costs and implicit costs when counting profit.
- Therefore, economic profit is the difference between total revenue and total costs which consist of costs of production (explicit) and the cost of the opportunity left elsewhere (implicit). Implicit cost is also called **opportunity cost**.
- An example of opportunity cost: a person works in a car wash business and earns an income of R1500 per month. Then this person decided to leave the job to open a business of selling cabbages. His/her opportunity cost is the amount of R1500 which she/he was sure to get every month. When economist count costs they add the amount spent on production in the new business (explicit) plus the salary given up (implicit cost).
- In other words, accounting profit exclude implicit cost while economic profit includes both explicit and implicit costs. Therefore, profit counted in an accounting way looks higher than the same profit counted in an economic way.

2. SHORT RUN COSTS

- Short run in production is a period so immediate that a firm cannot change all its factors of production (It is a period in production during which some factors of production remain fixed)
- In other words, the period is so short that the firm cannot have enough money to expand all its production inputs. Factors that needs a lot of money usually remain fixed in the immediate term e.g. land (building), expensive machinery and equipment.
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- The costs associated with the fixed inputs are called fixed costs (e.g. rent) while the costs associated with variable inputs are called variable costs (e.g. raw material)
- In production, a period (e.g. short run) is not measured in literal (exact) time but it is measured in the time the firm will take to have enough money to afford to change all inputs.
- In other words, one cannot say short run is one year as for some it can be few months while for others it can be years (it depend on the type of business).
- Example a short run for a fat cake seller may be few months while for a firm producing electricity, a short run may be several years. This is because the fixed costs of the fat

cake business can be a **stall** which causes relatively less money. The fixed costs of a firm producing electricity is power stations which costs billions of rands.

2.1 Total costs (TC)

- Total costs are the sum total of all fixed costs and all variable costs
- Fixed costs are costs that remain the same irrespective of the level of production e.g. rent, insurance, salaries etc. The sum of all fixed costs is called total fixed costs
- Variable costs are costs that change with the level of output e.g. raw material, electricity, fuel. The sum of all variable costs is called total variable costs
- Total costs can never be zero because of the fixed costs which are incurred even when no production takes place.
- The formula (equation) for total cost is: $TC = TFC + TVC$

2.2 Average Costs (AC or ATC)

- They are cost per unit of output. This means they explain how much has cost the firm to produce each unit. It is obtained by dividing the total costs by quantity produced.
$$AC = TC \div Q$$
- The average variable costs are obtained by dividing total variable costs by quantity produced ($AVC = TVC \div Q$).
- The average fixed costs is obtained by dividing total fixed costs by quantity produced ($AFC = TFC \div Q$)

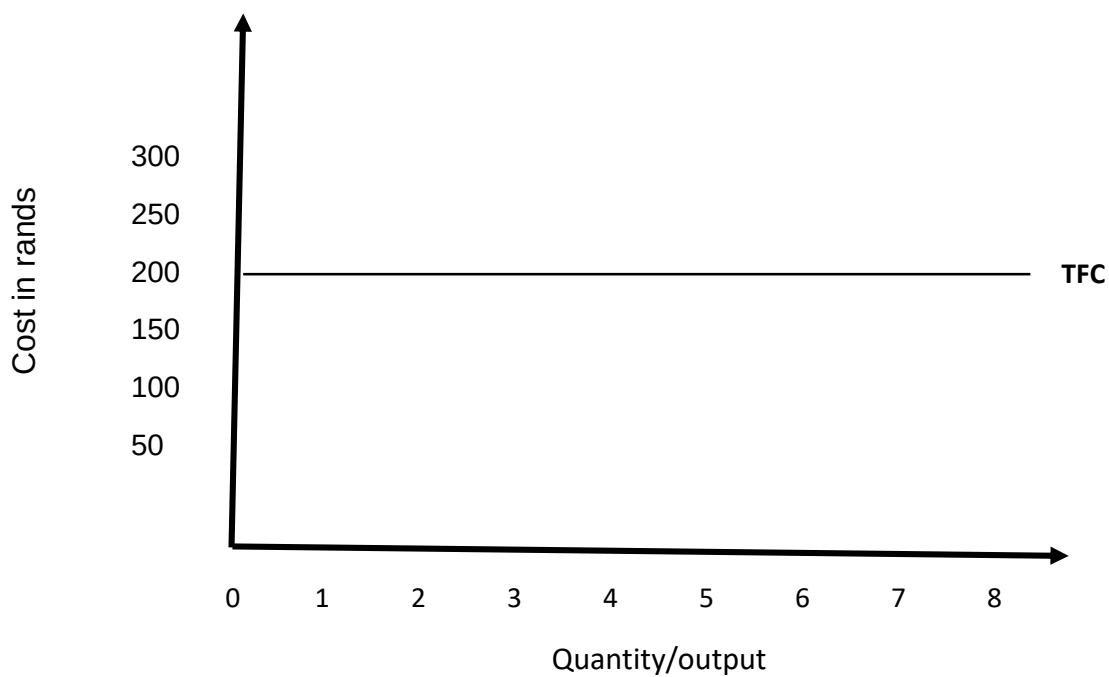
2.3 Marginal costs

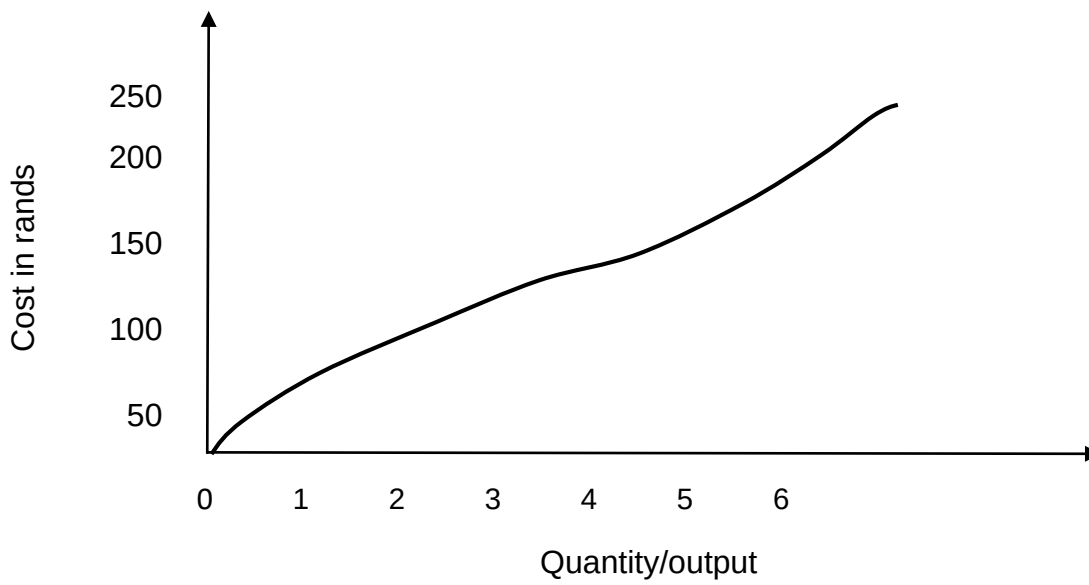
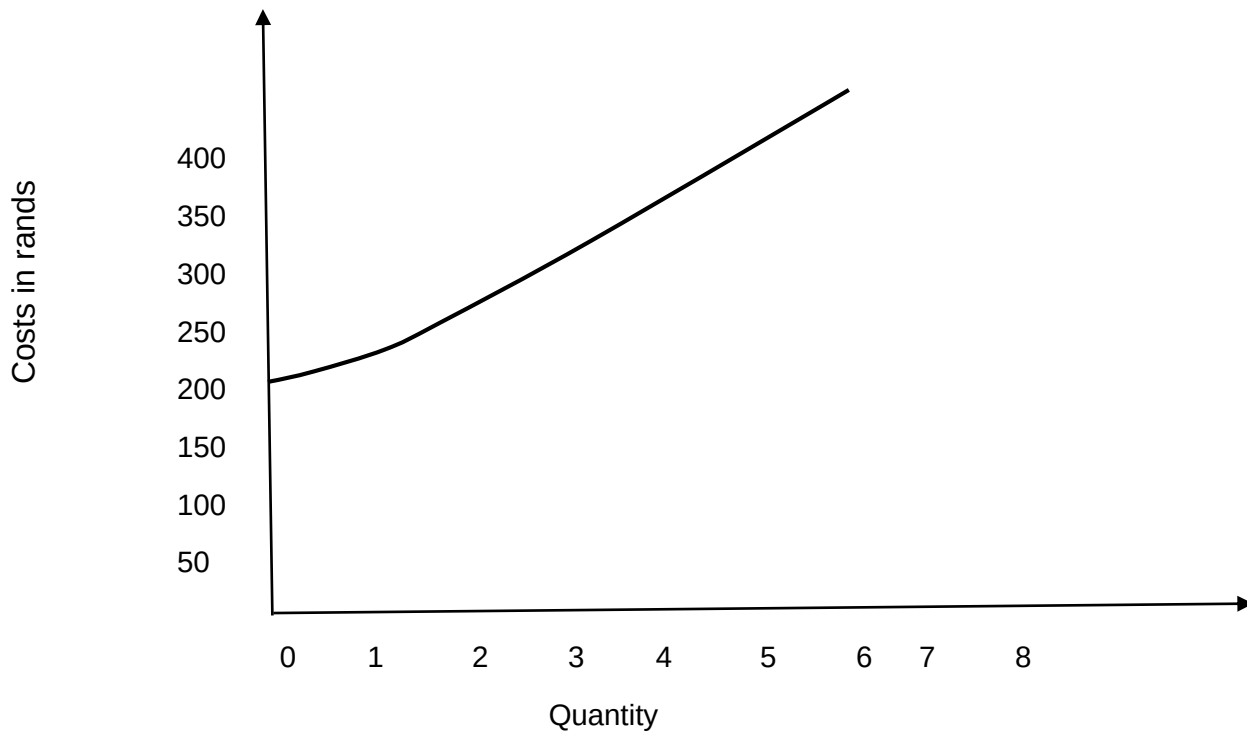
- It is additional cost incurred when a firm produce one additional unit of an output
- It shows the amount by which the total cost has increased after producing one extra unit,
- It is obtained by dividing the change in total costs by a change in quantity produced

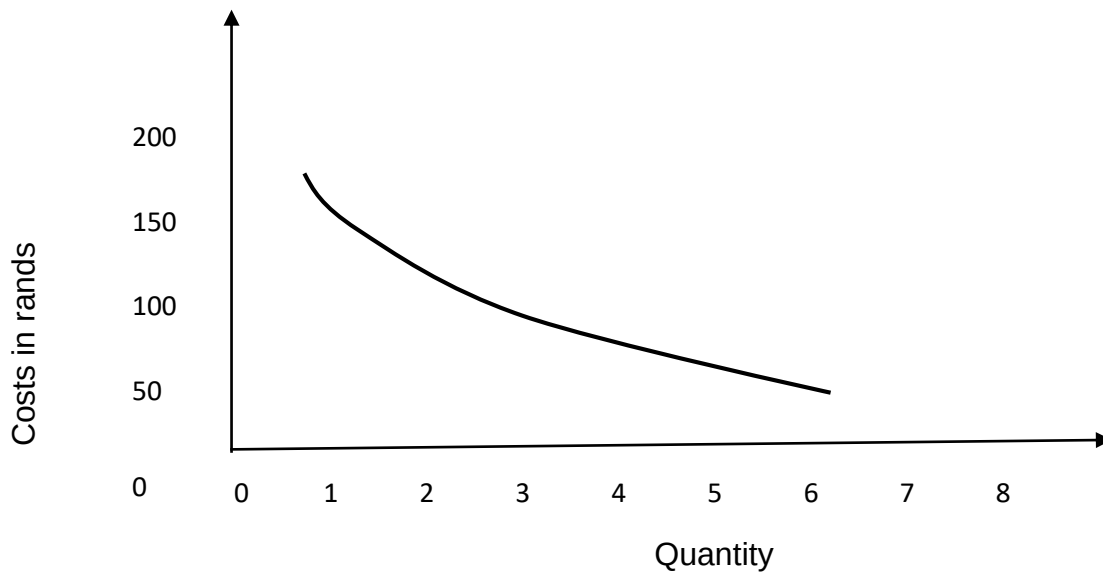
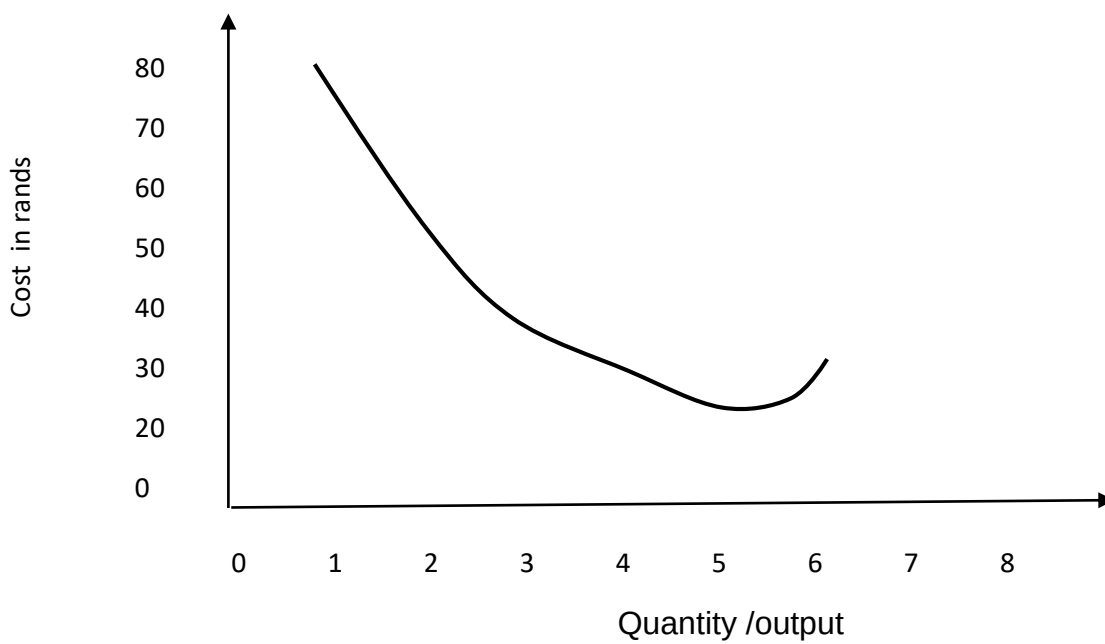
$$MC = \frac{\Delta TC}{\Delta Q}$$

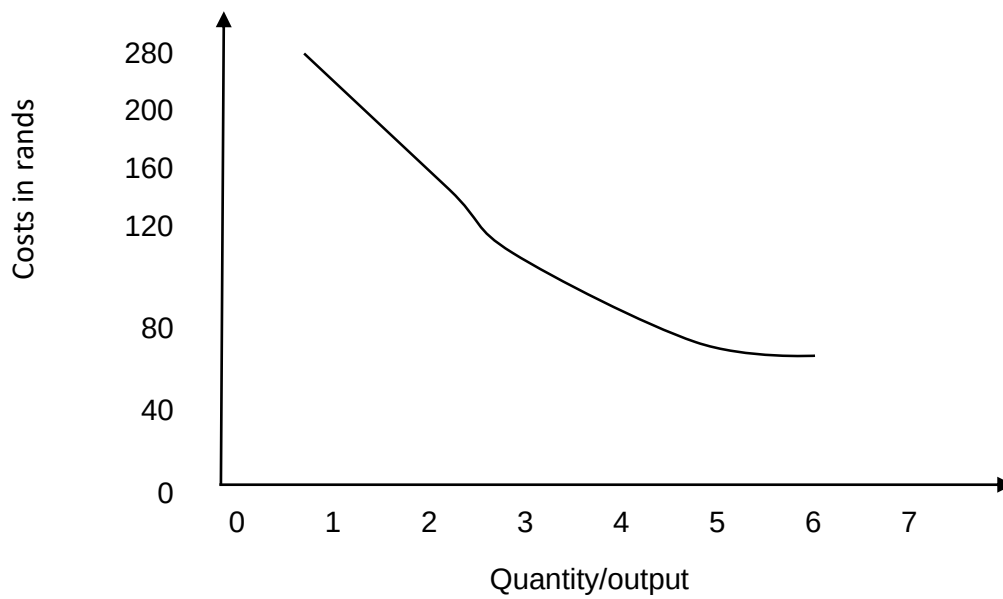
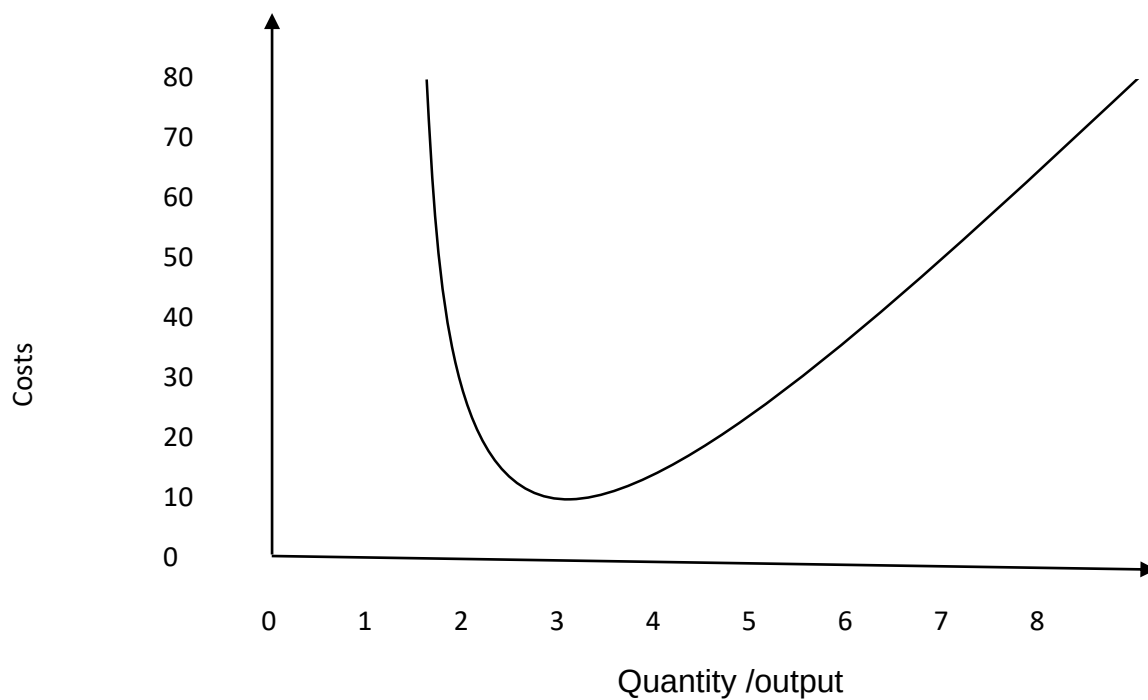
3. A COST SCHEDULE FOR SELLING CABBAGES

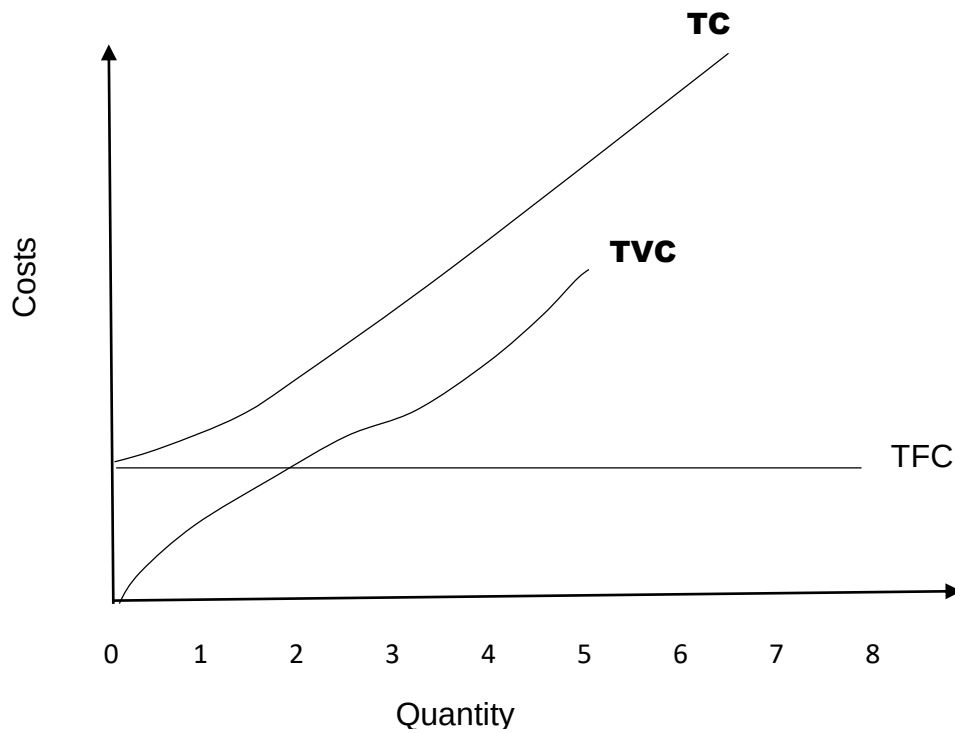
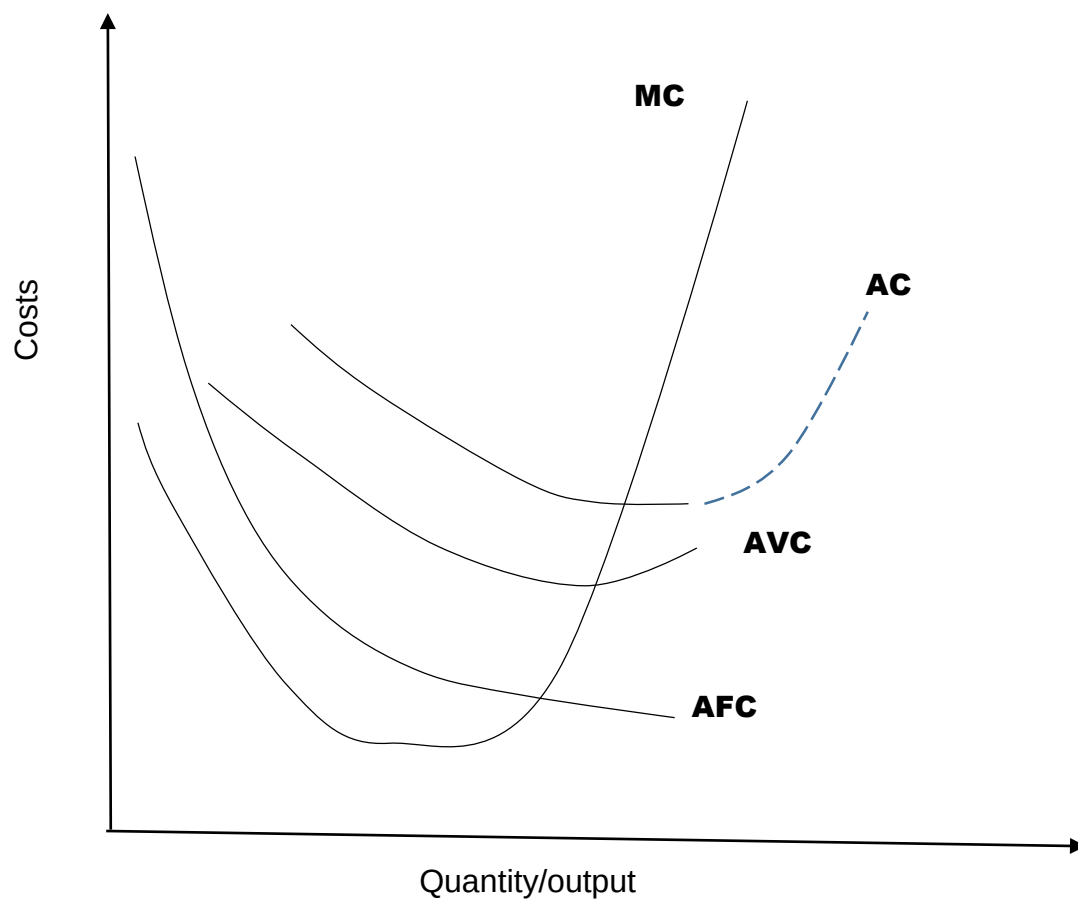
Q	TFC	TVC	TC (TFC + TVC)	AFC (TFC ÷ Q)	AVC (TVC ÷ Q)	AC /ATC (TC ÷ Q)	MC (Δ TC ÷ Δ Q)
0	200	0	200	-	-	-	
1	200	80	280	200	80	280	80
2	200	100	300	100	50	150	20
3	200	110	310	67	37	103	10
4	200	130	330	50	33	83	20
5	200	160	360	40	32	72	30
6	200	200	400	33	33	67	40

4. SHORT RUN COST CURVES**4.1 Total fixed costs curve**

4.2 Total variable cost curve**4.2 Total costs curve**

4.4 Average Fixed Costs curve**4.5 Average Variable Costs curve**

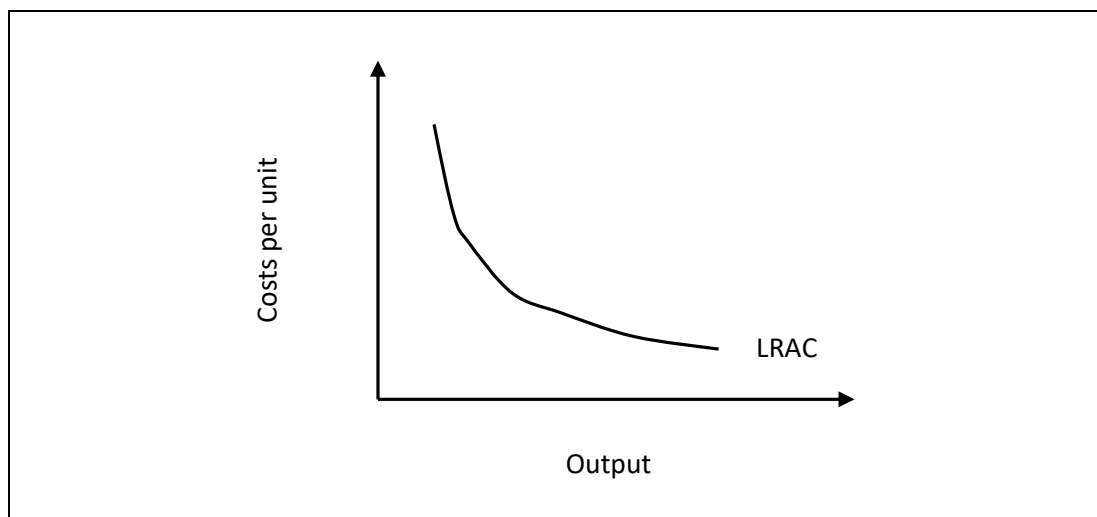
4.5 Average cost (Average total cost) curve**Marginal cost curve**

5. TOTAL COST CURVES ON ONE SET OF AXIS**6. Average and marginal costs on one set of axis**

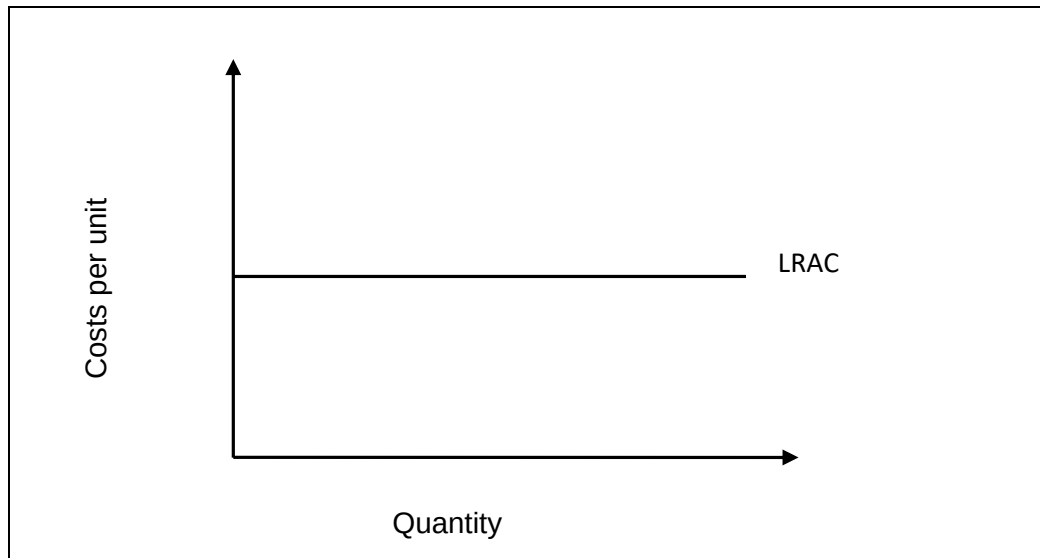
1. LONG RUN AVERAGE COSTS OF A FIRM

- Long run is a period long enough for a firm to be able to change all factors of production. There are no fixed factors of production, therefore, there is no fixed costs. All factors of production are variable; therefore, all costs are variable.
- Different industries can achieve their long run at different times because long run (and short run) is not determined by the period of time a firm has been operating, but it is determined by the firm's ability to afford to pay for their change in all production factors. When the firm can afford to increase (or decrease) all their resources, the firm has reached the long run. A long run of a fat cake seller can be few months to a year while the long run of a car manufacturer can be a number of years.
- The LRAC usually consists of a number of short run curves.
- Each time a business changes its size it will have a new SRAC curve.
- In the long run when a firm increases its production, there can be three different effects on costs and are represented below:

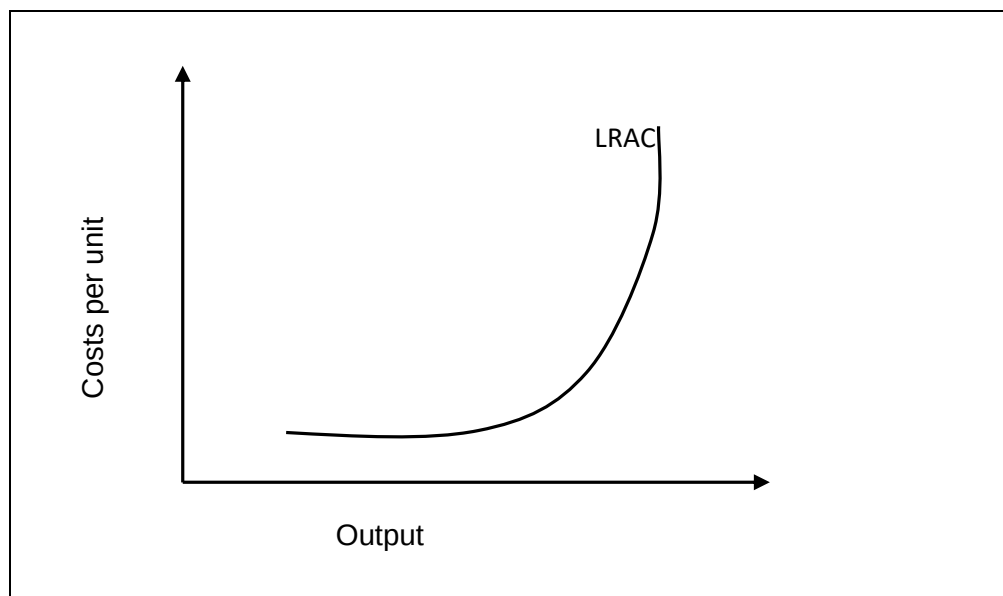
Economies of scale



- When a firm first expands, it can experience economies of scale. This means the firm's production costs (LRAC) decrease with an increase in production.
- Due to economies of scale, the long-run average cost (LRAC) curve slopes downwards from left to right.
- This is due to costs decreasing as units produced increase.
- This means that as the company produces more, the marginal costs will be lower than of the previous unit. Marginal cost is the cost for producing one extra unit.
- This is because the fixed costs can then be divided among more units than before, and in some instances, buying in bulk can make the firm be given some discounts when buying inputs.

Constant return to scale

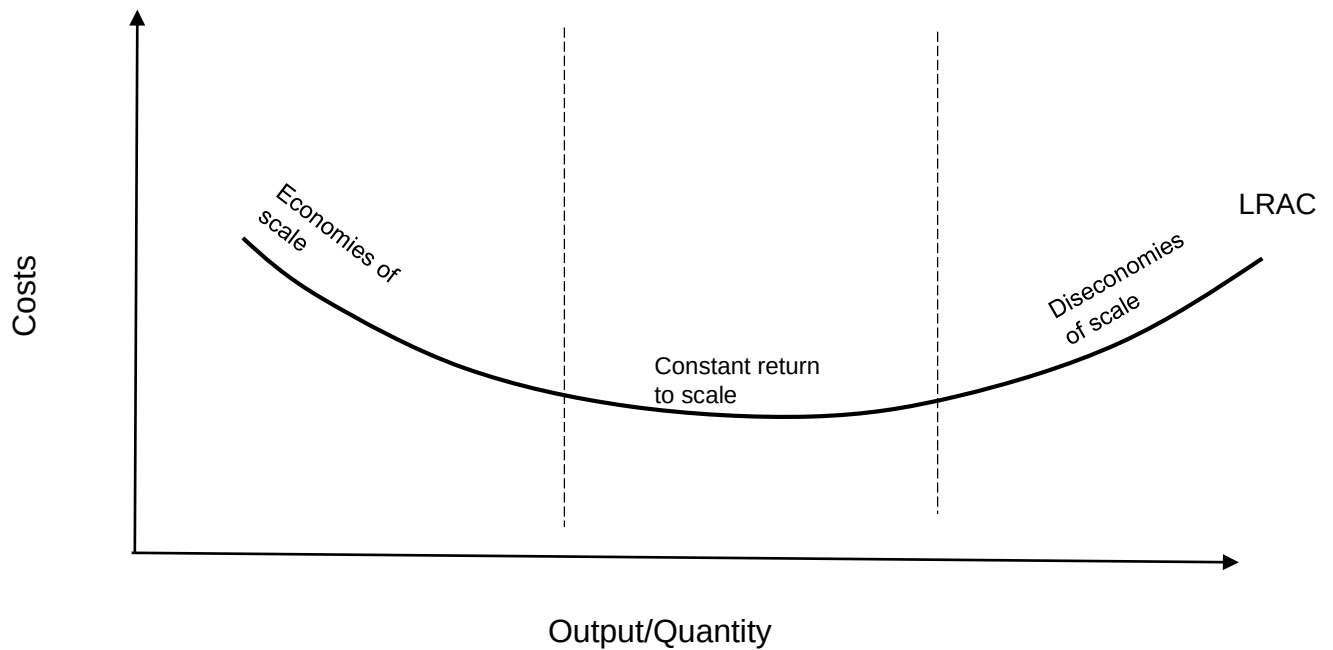
- After a while a firm can experience constant return to scale which means as it produces more, the average cost (LRAC) remain unchanged.
- This means the additional units will have the same costs as the previous units
- Therefore, there is no benefit for the firm to produce more unit

Diseconomies of scale

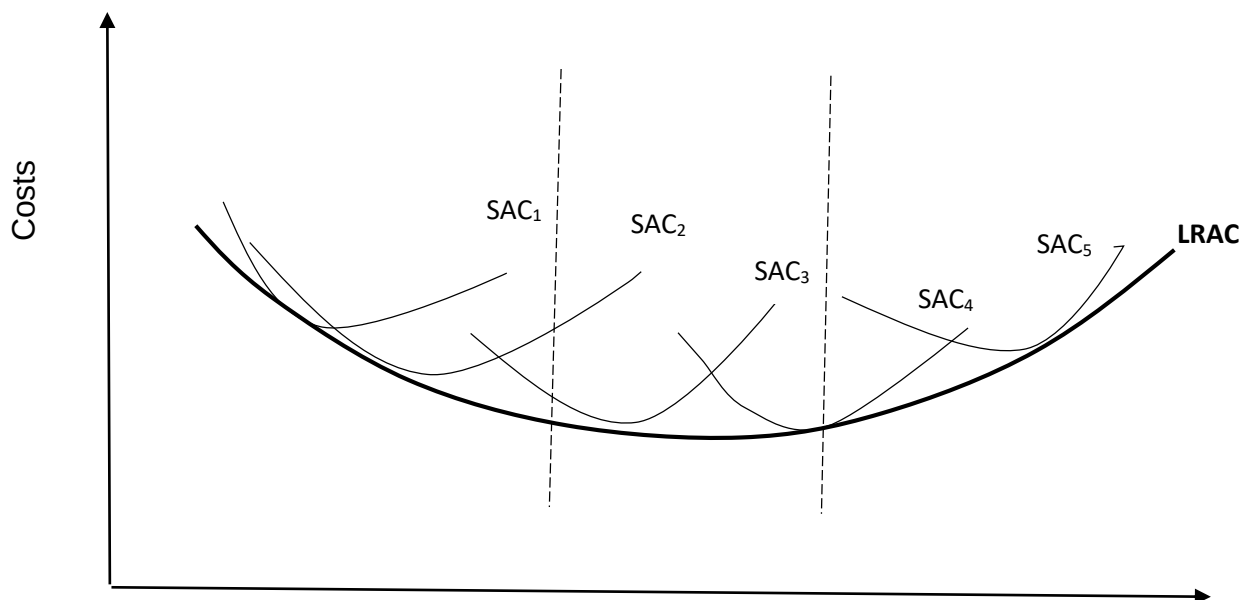
- If the business can continue growing, it will reach a stage where it experiences diseconomies of scale.
- Diseconomies of scale is when cost per unit increases while the quantity produced increase.
- This means the firm has become too big to manage effectively.

- The firm may experience other problems such as machinery breakdowns, workers may become inefficient due to their large numbers.

2. THE LRAC CURVE



LRAC SHOWING SERIES OF SHORT RUNS



REVENUE CALCULATIONS

- For a business to know whether it is able to make profit it should consider both costs and revenue
- Revenue is income that the firm earn from selling its products.

Types of revenue**1. Total revenue (TR)**

- It is the sum of income earned from the sale of the goods or services produced.
- Total revenue is calculated by multiplying quantity (Q) of products sold by price (P).
$$TR = P \times Q$$

2. Average revenue

- It is the price per unit of product. it is calculated by dividing total revenue by quantity sold.

$$AR = TR \div Q$$

3. Marginal revenue

- It is the revenue earned from selling one extra unit of a firm 's products.
- It represents a change in total revenue as one additional unit is produced.
- It is calculated by dividing a change in total revenue by a change in quantity sold.

$$MR = \frac{\Delta TR}{\Delta Q}$$

Revenue schedule of a firm

QUANTITY (Q)	PRICE (P)	TOTAL REVENUE (TR)	AVERAGE REVENUE (AR)	MARGINAL REVENUE (MR)
0	150	0	–	–
1	150	150	150	150
2	150	300	150	150
3	150	450	150	150
4	150	600	150	150
5	150	750	150	150
6	150	900	150	150

PROFIT AND LOSES

- Profit is the positive difference between total revenue and total costs of the firm.
- If the total costs are higher than total revenue the firm makes an **economic loss**
- In Economics there are two types of profits namely: normal profit and economic profit
- Normal profit is the minimum payment the firm should earn to stay in the business.
- **Normal profit** is obtained when the firm breaks even which means when the total revenue is equal to total cost (explicit costs and implicit cost)
- **Economic profit** is the extra profit that the firm makes above the normal profit.
- It is when total revenue is higher than total costs (explicit and implicit costs)

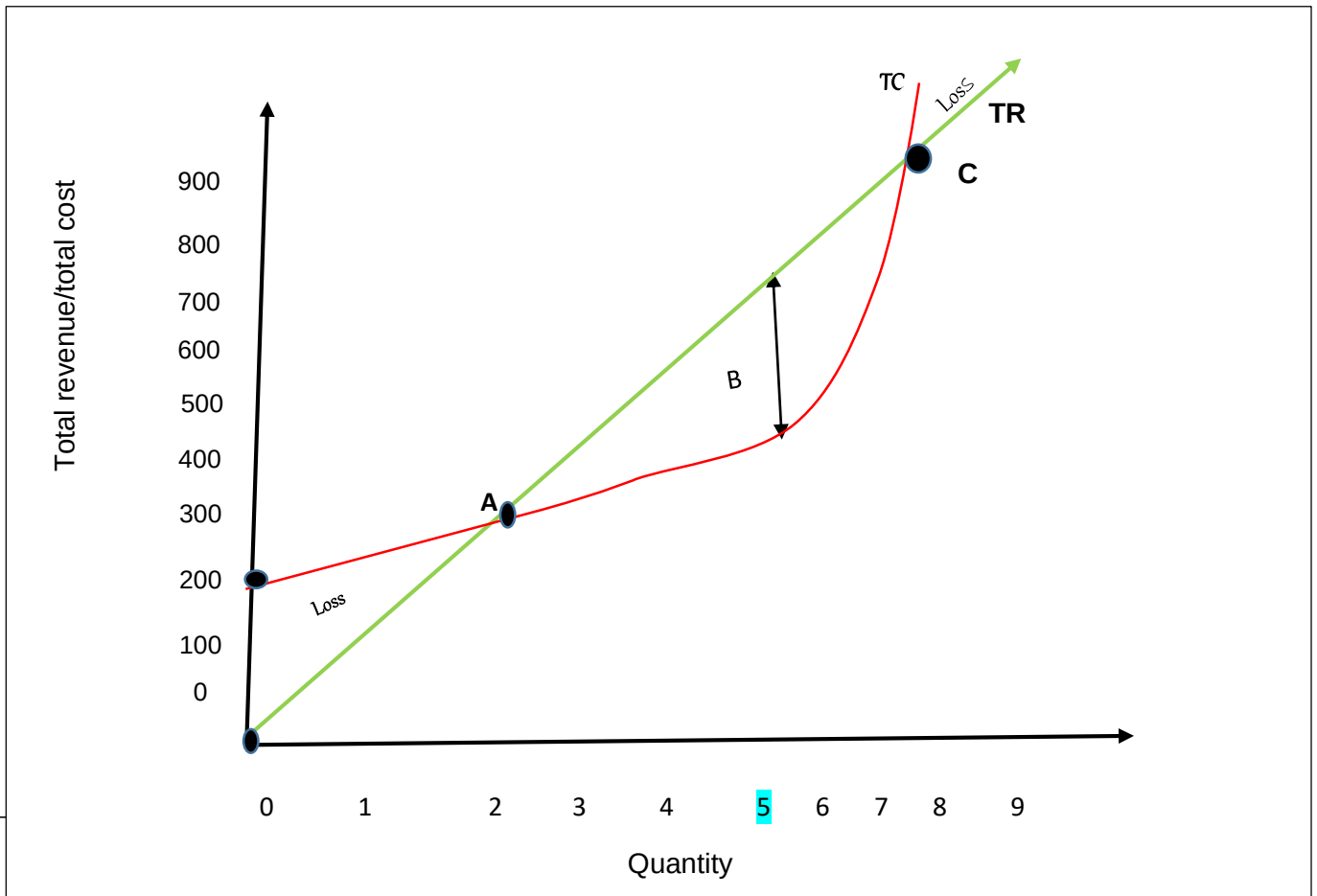
Q	PRICE (P)	TC (Implicit & explicit)	TR	PROFIT/ LOSS (TR – TC)
0	150	200	0	-200
1	150	280	150	-130
2	150	300	300	0
3	150	310	450	150
4	150	330	600	270
5	150	360	750	390
6	150	520	900	380
7	150	600	800	200
8	150	850	850	0
9	150	890	860	-30
10	150	950	900	-50

Profit maximization in perfect market

There are two ways in which a firm can determine a point where it can make highest profit (maximise profit).

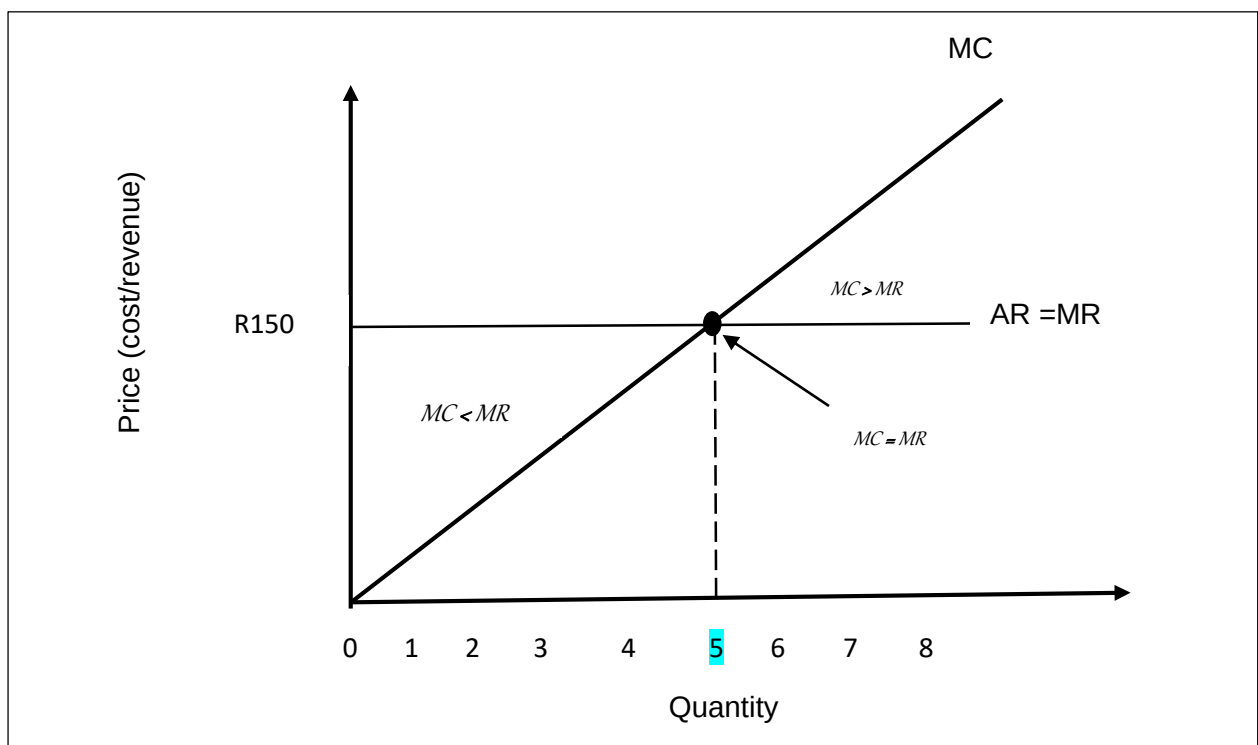
- The two approaches to determine profit maximisation are:

1. Total revenue and Total cost approach



- A perfectly competitive firm **maximises profit** where the positive difference between the total revenue and total cost is the highest,
- The profit maximisation point is at B and the quantity is 5.
- At unit 2 the firm breaks even (makes normal profit) because $TR = TC$
- At less than 2 unit produced, the firm makes an economic loss, so it has to increase its production to obtain profit.
- The firm makes economic profit when producing between 2 and 8 units of the product, but this profit is the highest when producing 5 units. Economic profit is achieved when $TR > TC$.
- The firm break even again at quantity 8 (point C), which means normal profit is made.
- When producing more than 8 units, the firm makes a loss, because TC is higher than TR .

2. Marginal cost = Marginal revenue approach



- The firm makes the highest profit where $MC = MR$, which is at quantity 5.
- Where $MC = MR$ is referred to as **profit maximisation point**.
- At any quantity to the left of the profit maximisation point (e.g. 1, 2, 3 and 4), the firm's cost for producing any one additional unit is lower than the revenue received from such unit ($MC < MR$). The firm can still increase its profit by increasing production.
- At any quantity to the right of the profit maximisation point (e.g. 6, 7 and 8), the cost of producing any additional units of a product is higher than the revenue received from such unit ($MC > MR$). Therefore, any of the additional unit produced will reduce the firm's total profit because such units bring no additional profit.