12. # Chapter 10 Output and costs

The Short run

- Time frame in which the quantity of at least one factor of production is fixed. eg capital, land.
- To increase output in short run, firm must increase quantity of a variable factor of production (usually labour)

The long run

- Time frame in which quantities of ALL factors of production can be varied
- To increase output, can change (capital, land) plant or labour

Short run technology constant.

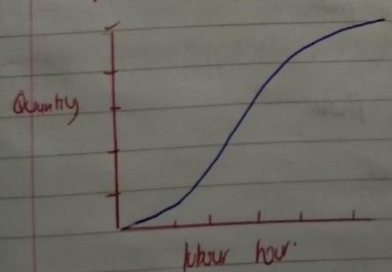
Total output, marginal product, average product

Total product - max output that a given quantity of labour can produce.

Marginal product - increase in total product resulting from a one-unit increase in the quantity of labour employed all else unchanged

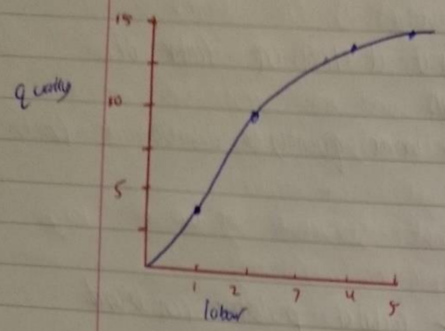
Average product - how productive workers are on average equal to total product divided by labour employed.

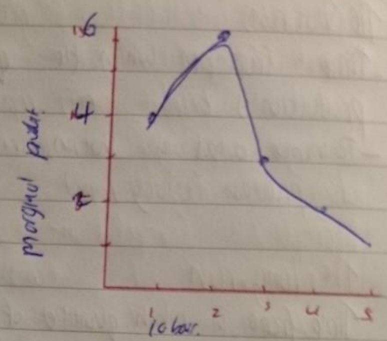
Total product curve



2.

Marginal product curve



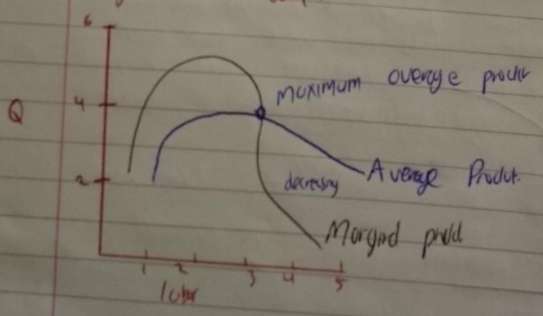


Increasing marginal returns occurs when marginal product of an additional worker exceeds the marginal product of previous work

Decreasing - opposite

law of diminishing returns states: As a firm uses more of a variable factor of production, with a given quantity of the fixed factor of production, the marginal product of the variable factor eventually diminishes

Average Product Curve:



For Examiner's Use

Chapter 10

Short run cost
Total cost, marginal cost, average cost

Total cost (TC) - cost of all the factors of production it uses
- Seperated into fixed and variable

Total fixed costs TFC
Total variable cost TVC

Marginal cost
Change in total cost resulting from one unit increase in output.
$= \frac{\text{change total cost}}{\text{change in output}}$

Average cost
Average fixed cost, Average variable cost, average total cost.
AFC AVC ATC

AFC is total fixed cost per unit of output
AVC total variable cost per unit of output
ATC total cost per unit

When marginal cost is less than average cost - Average cost is decreasing

4.

Long run cost All cost variable

Diminishing returns - occurs in each plant as quantity of labour increased

Diminishing marginal product of capital: occurs as quantity of capital increased
marginal product of capital is change in total product divided by change in capital employed when labour is constant

- each short run Average Total Cost is U-shaped
- For each short run ATC curve the larger the plant the greater is the output at which total cost is a minimum

long run average cost curve is relationship between lowest attainable average total cost and output when both plant size and labour are varied (LRAC)

Minimum efficient scale when LRAC curve is low.
Smallest quantity of output at which long run average cost reaches its lowest level