PRODUCTION

PRODUCTION INTRODUCTION:

Production is a process of combining various material inputs and immaterial inputs (plans, know-how) in order to make something for consumption (output). It is the act of creating an output, a good or service which has value and contributes to the utility of individuals. The area of economics that focuses on production is referred to as production theory, which in many respects is similar to the consumption (or consumer) theory in economics.

WHAT IS PRODUCTION ?

In simple way we can say that production is an activity that transforms input into output

Factors affecting productivity

☺Technology

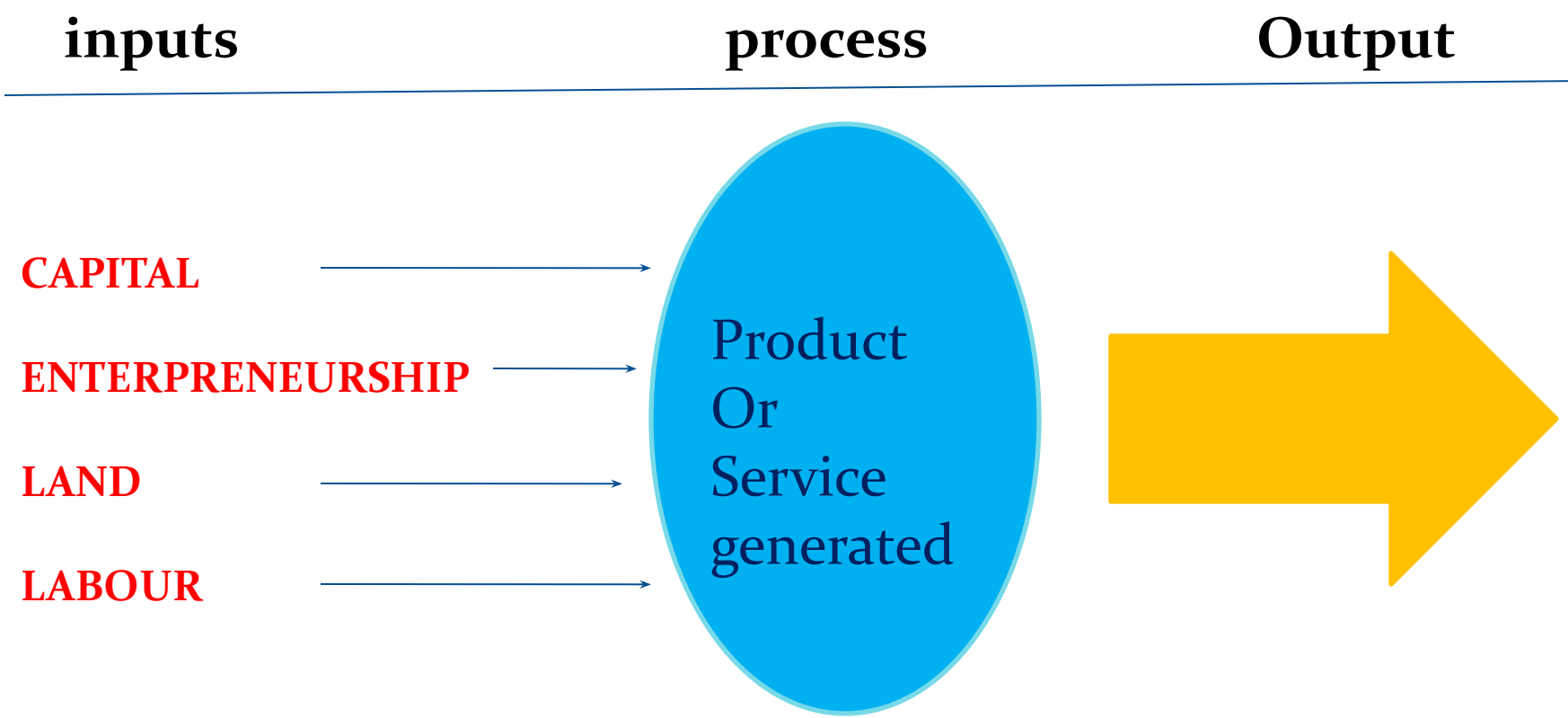
☺Inputs

C-capital

E-entrepreneurship

L-land

L- labour


inputs
process
Output
CAPITAL
ENTERPRENEURSHIP
LAND
LABOUR
Product
Or
Service
generated

PRODUCTION FUNCTION

A production function can be an equation ,table or graph presenting the maximum amount of a company that a firm can produce from a given set of inputs during a period of time

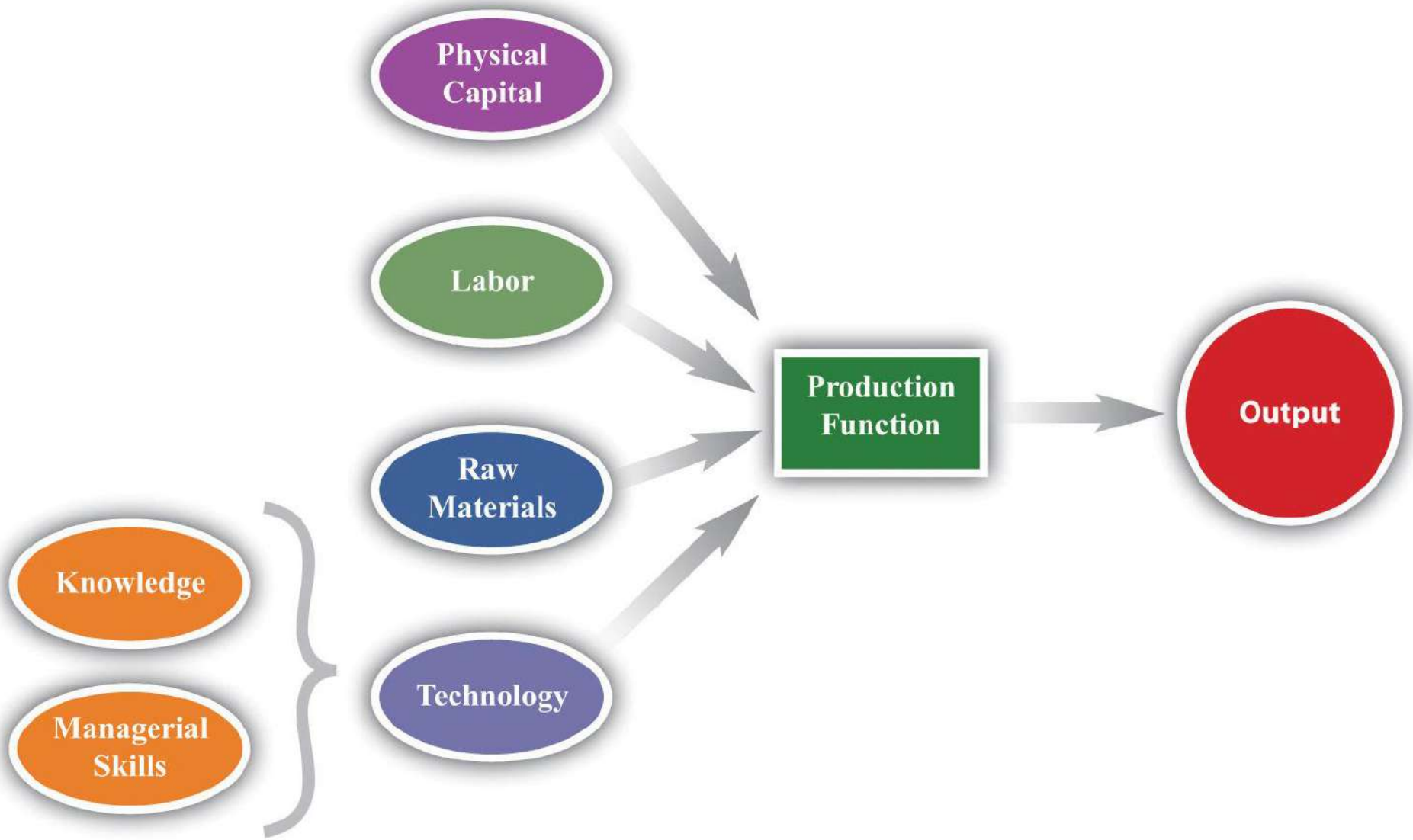
Production function ☺

The production function can be mathematically written as:

$$Q=f(L,K,T.....n)$$

Where.

Q = output
L = labour
K = capital
T = level of technology
n = other inputs employed in production


Physical Capital
Labor
Raw Materials
Technology
Knowledge
Managerial Skills
Production Function
Output

USE OF PRODUCTION FUNCTION

- How to obtain maximum output
- Helps the producers to determine whether employing variable inputs /costs are profitable
- Highly useful in longrun decisions
- least cost combination of inputs and to produce an output

LAWS OF PRODUCTION

- Law of diminishing returns or law of variable proportion
- Laws of return to scale

Law of Return to Scale

The law of return to scale is a long term concept ,it is applicable when all the factors of production are variable . The term returns to scale refers to change in output as all factors of production are changed by the same proportion.

- It is a long run analysis & all factors are variable.
- It seeks to analyse the effects of scale on the level of output.

Defination

Acc to kouts oyiannis , " The term return to scale refers to change in output as all factors change by the same proportion"

Equation

P=f(L,K)

where

P= Production , K =capital and L= Labour

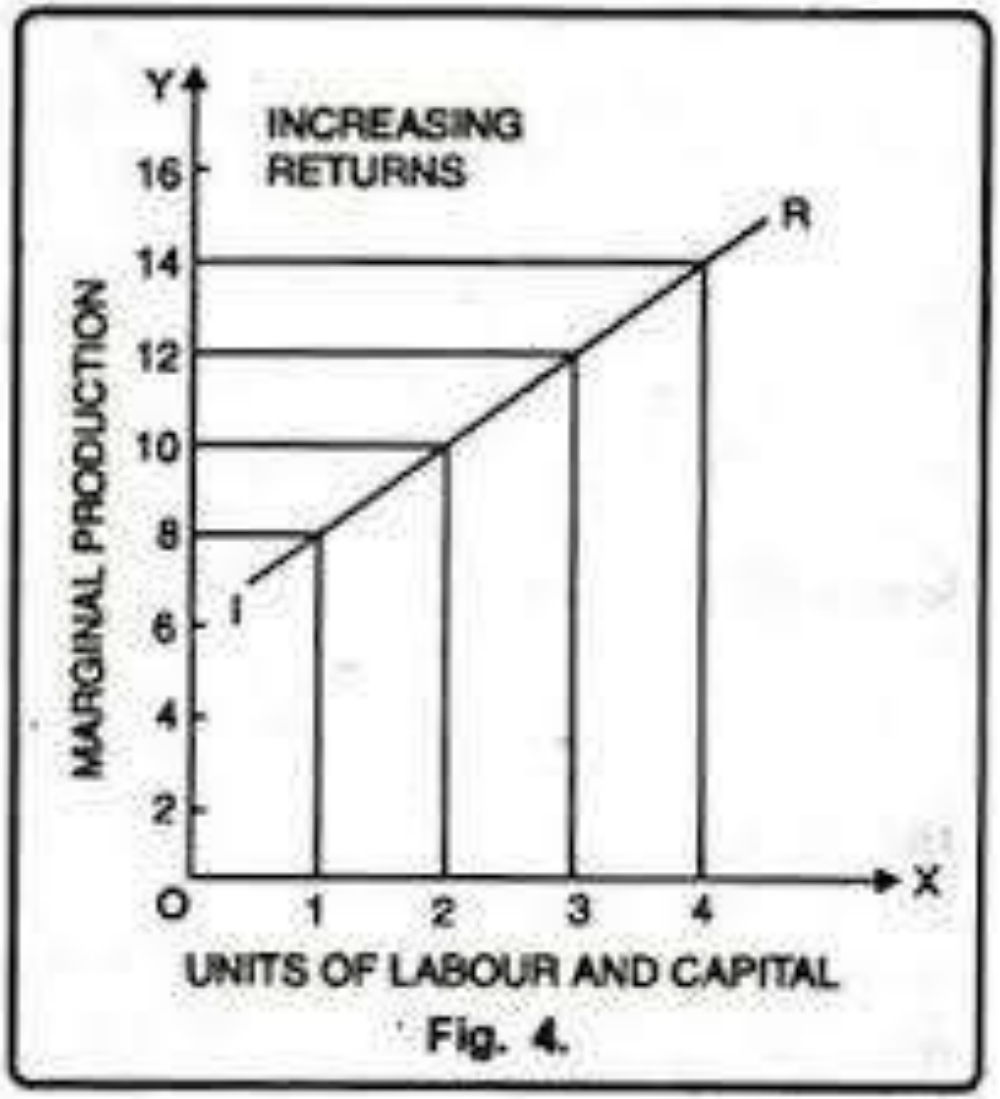
Three kinds of returns to scale:

I. INCREASING RETURNS TO SCALE
II. CONSTANT RETURNS TO SCALE
III. DECREASING RETURN TO SCALE

☺️ 1. LAW OF INCREASING RETURNS TO SCALE

Increasing return to scale occurs is when a given percentage in all factors input causes proportionately greater increase in output and it can be explain properly with the help of following table & diagram .

Labour	Capital	% change	Total production	% change in tp
1	2	----------	10	----------
2	4	100%	30	200%
3	6	50%	60	100%


Y
INCREASING
RETURNS
16
14
12
10
8
6
4
2
R
I
MARGINAL PRODUCTION
O
1
2
3
4
X
UNITS OF LABOUR AND CAPITAL
Fig. 4.

It is clear from above diagram that all factors input (labour , capital) are increased in the same proportion then TP increase with greater proportion so this stage is known as increasing returns to scale

☺️ 2. CONCEPT RETURN TO SCALE

This situation occurs when a given percentage increases in all factors input in the some proportion causes equal percentage increase in output it can be explain properly with the help of following table and diagram:

Table

Labour	Capital	%change in L&k	Total production	% change in TP
1	2	----------	10	----------
2	4	100%	20	100%
3	6	50%	30	50%

Diagram

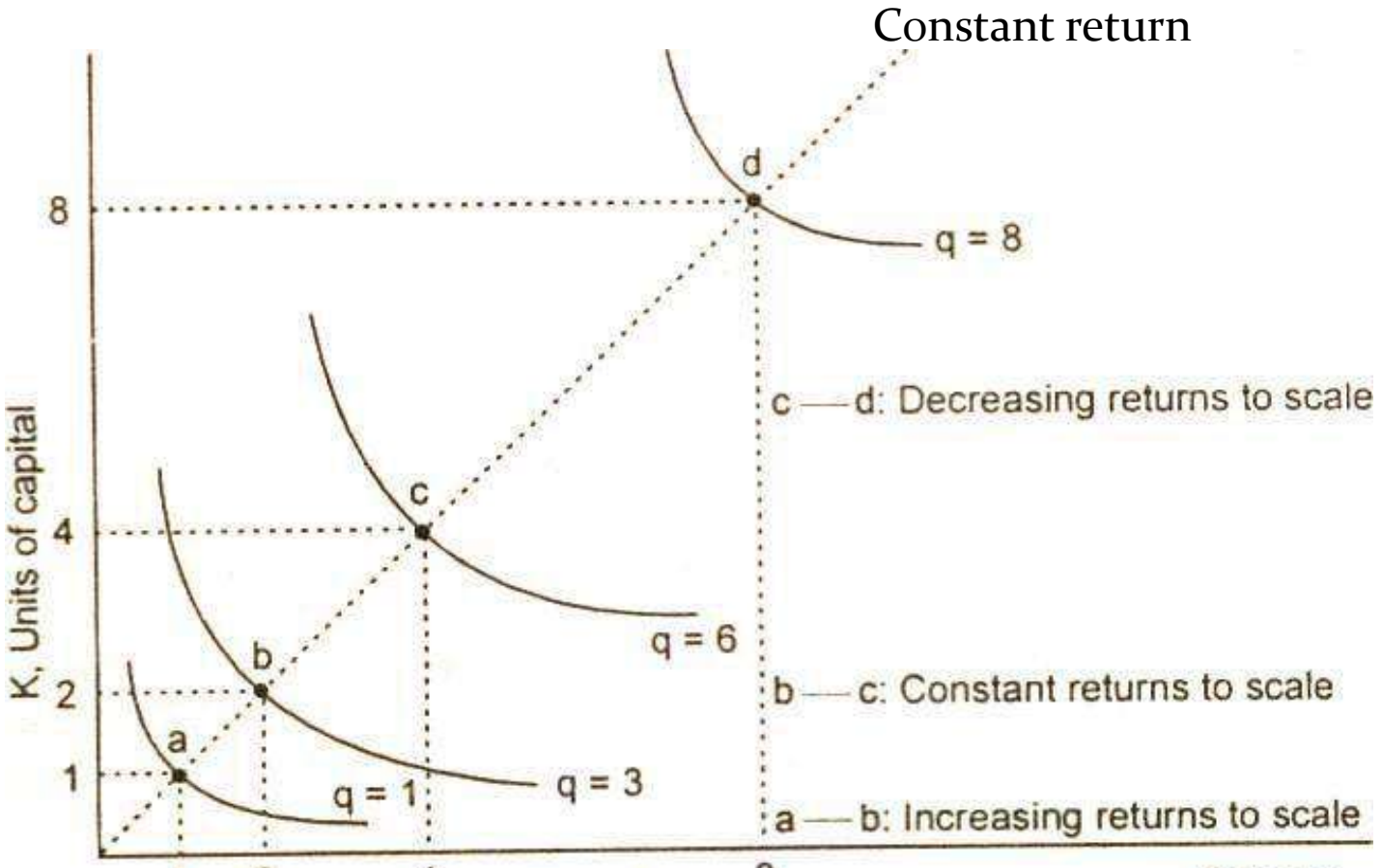


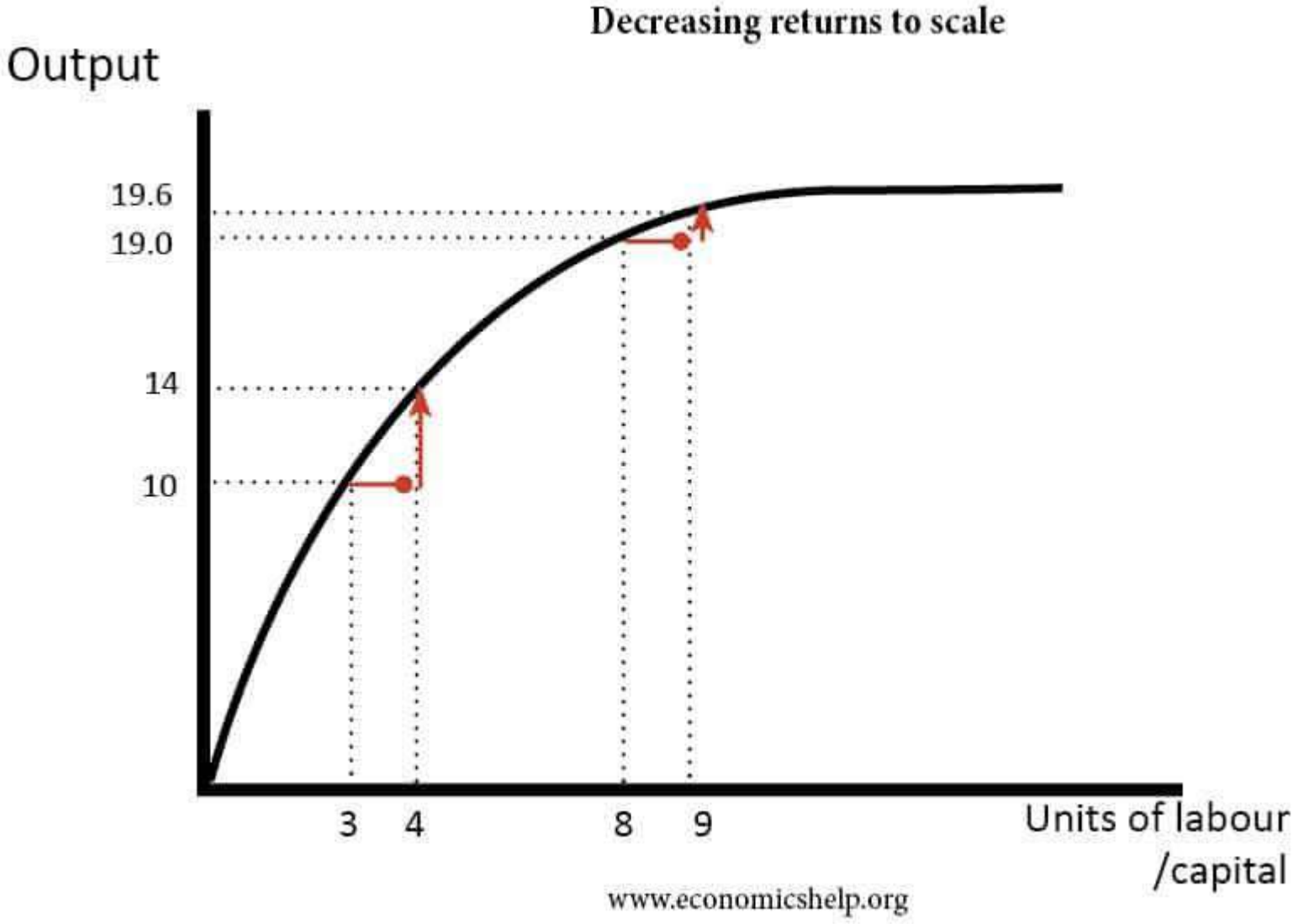
Fig. 11.6 Stage change in input

It is clear from above table & diagram if percentage increase in factor input is matched with the percentage change in output then situation is known as constant return to scale

☺️ 3. DIMINSHING RETURN TO SCALE

Diminishing returns to scale occurs when a given percentage increase in all factors input in the same proportion eauses proportionally less increase in output it can be explain properly with the help of following table & diagram:

Labour	capital	% change in l & R	Total production	% change in TP
1	2	----------	10	----------
2	4	100%	15	50%
3	6	50%	18	20%


Decreasing returns to scale
Output
19.6
19.0
14
10
3
4
8
9
Units of labour /capital
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It is clear from above diagram that if percentage change in factor inputs to more than percentage change in output then the third stage of production occurs which is known as diminishing return to scale.

Conclusion

In the end we can say that the law of returns to scale in long term theory where all the factors are variable when all the factor are variable when these factors are increased by the same proportion then the three stages of production occurs increasing , constant and diminishing return to scale.

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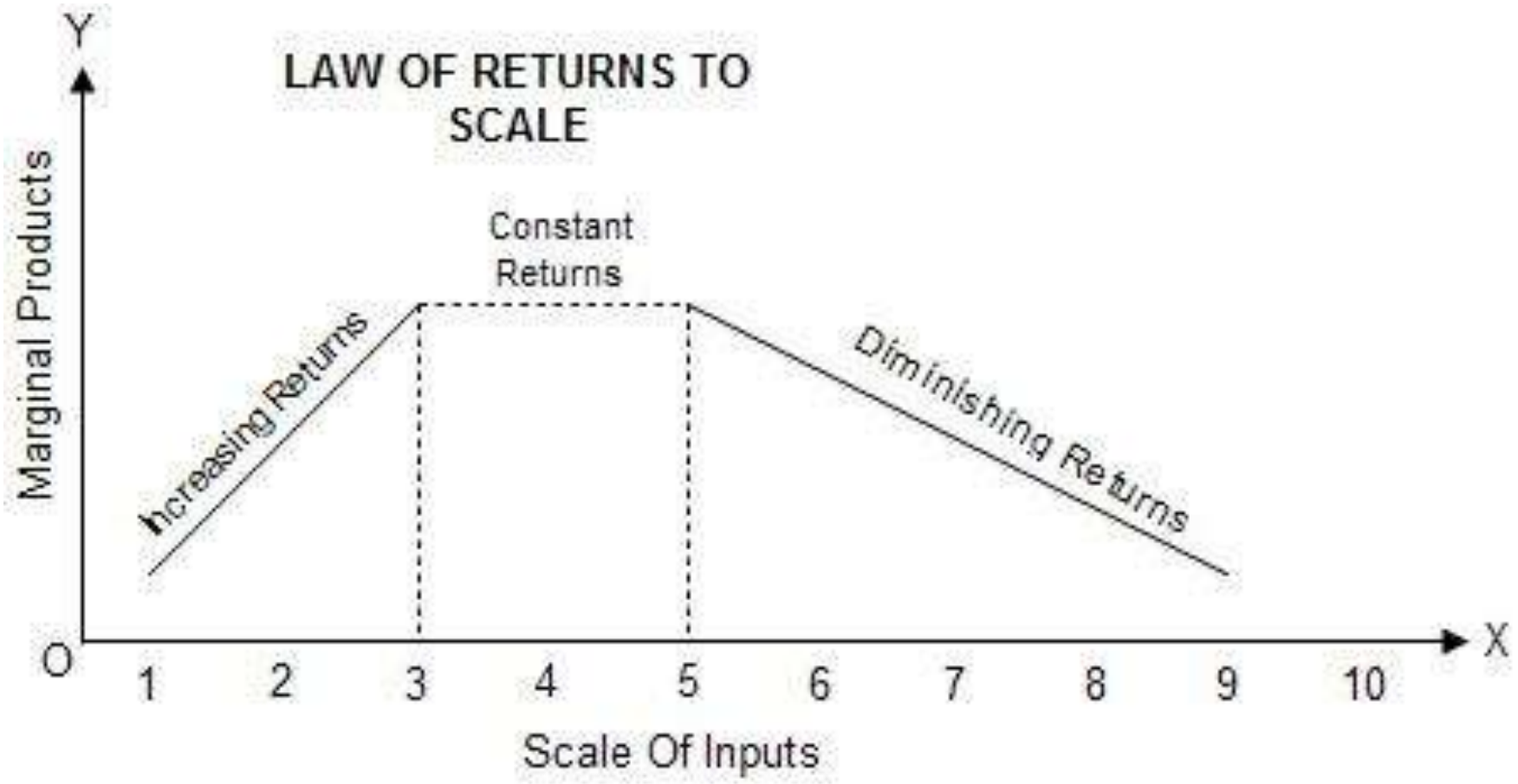
LAW OF RETURNS TO SCALE
Y
Marginal Products
Constant Returns
Increasing Returns
Diminishing Returns
O
X
1
2
3
4
5
6
7
8
9
10
Scale Of Inputs

ISOQUANTS

- Isoquant is a curve representing the various combination of two inputs that produce the same amount of output.
  Also called as equal product curve.

- Slope of an isoquant indicates the rate at which factors K and L can be substituted for each other while a constant level of production is maintained.

THANK YOU