

Law of Variable Proportion

Meaning :- Law of variable proportion states that as more and more of variable factor is combined with the fixed factor, a stage must ultimately come when marginal product of the variable factor starts declining.

Explanation of the law :-

We can explain the law with the help of a table and diagram.

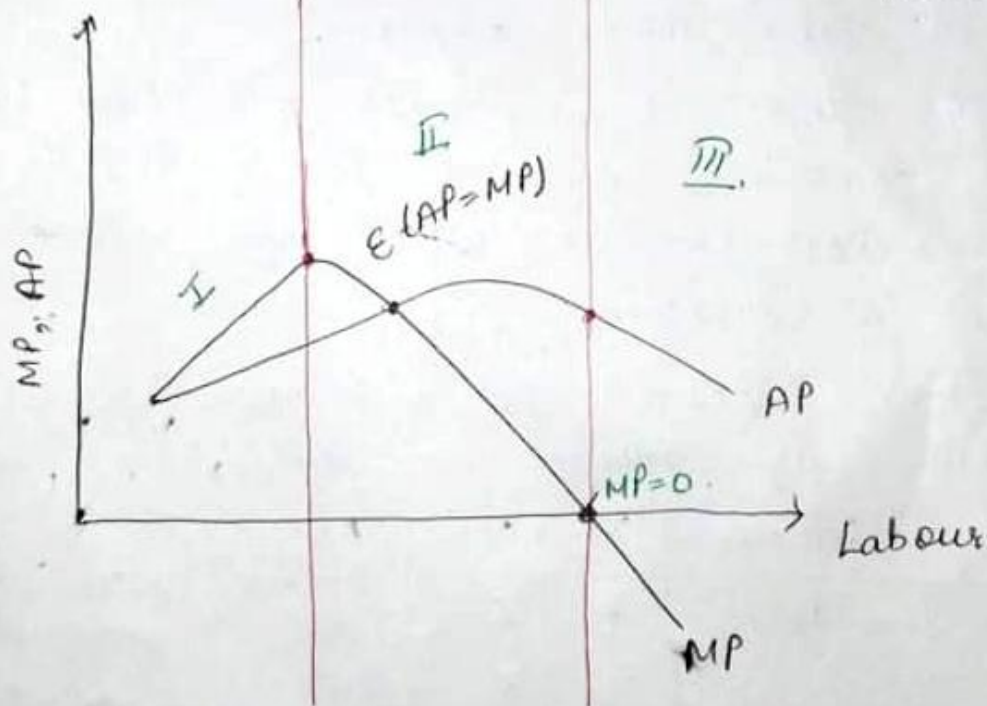
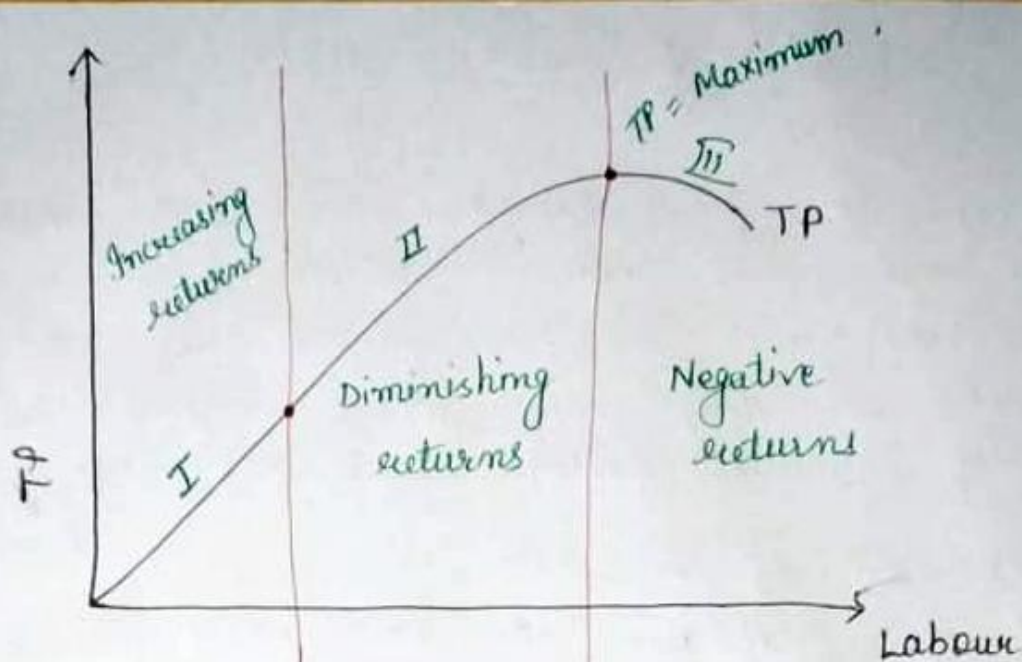
Suppose, there is a farmer who have 1 hectare land, machine, seeds & fertilizers. He want to ~~impose~~ produce wheat by imposing units of labour.

He has imposed more and more units of labour as shown in table.

Land	Labour	TP	MP	AP
1	1	2	2	2
1	2	5	3	2.5
1	3	9	4	3 I Stage
1	4	12	3	3
1	5	14	2	2.8
1	6	15	1	2.5
1	7	15	0	2.1 II Stage
1	8	14	-1	1.7 III Stage

$$\begin{aligned} * TP &= 2+3=5 \\ &= 5+4=9 \end{aligned}$$

$$\begin{aligned} * AP &= \frac{TP}{L} \\ &= \frac{2}{1} = 2 \\ &= \frac{5}{2} = 2.5 \end{aligned}$$



* Causes of Increasing returns to a factor

1) Fuller utilisation of fixed factor-

When we use additional unit of variable factor on fixed factor, fuller utilisation of fixed factor become possible. That is why MP of variable factor tends to increase.

ii) Better coordination between the factors: 2.

When we use more units of variable factor on fixed factor due to this coordination between the factors becomes better. As a result total output increases at increasing rate.

(iii) Increased efficiency of variable factor:

Additional application of the variable factor causes process based on division of labour that raises efficiency of a factor. So marginal ~~efficiency~~ productivity of a factor increases.

* Causes of diminishing returns to a factor

(i) Fixity of a factor →

As more unit of variable factor continues to become buying with fixed factor, the latter gets overutilised. Hence, diminishing returns.

(ii) Imperfect factor suitability

Factor of production are imperfect substitute of each other. More and more labour cannot be used in place of additional capital. So, diminishing returns to a factor becomes possible.

(iii) Poor coordination between the factors

Continuous increase in variable factor along with fixed factor beyond a point crosses the limit of ideal fixed ratio. Therefore diminishing returns.