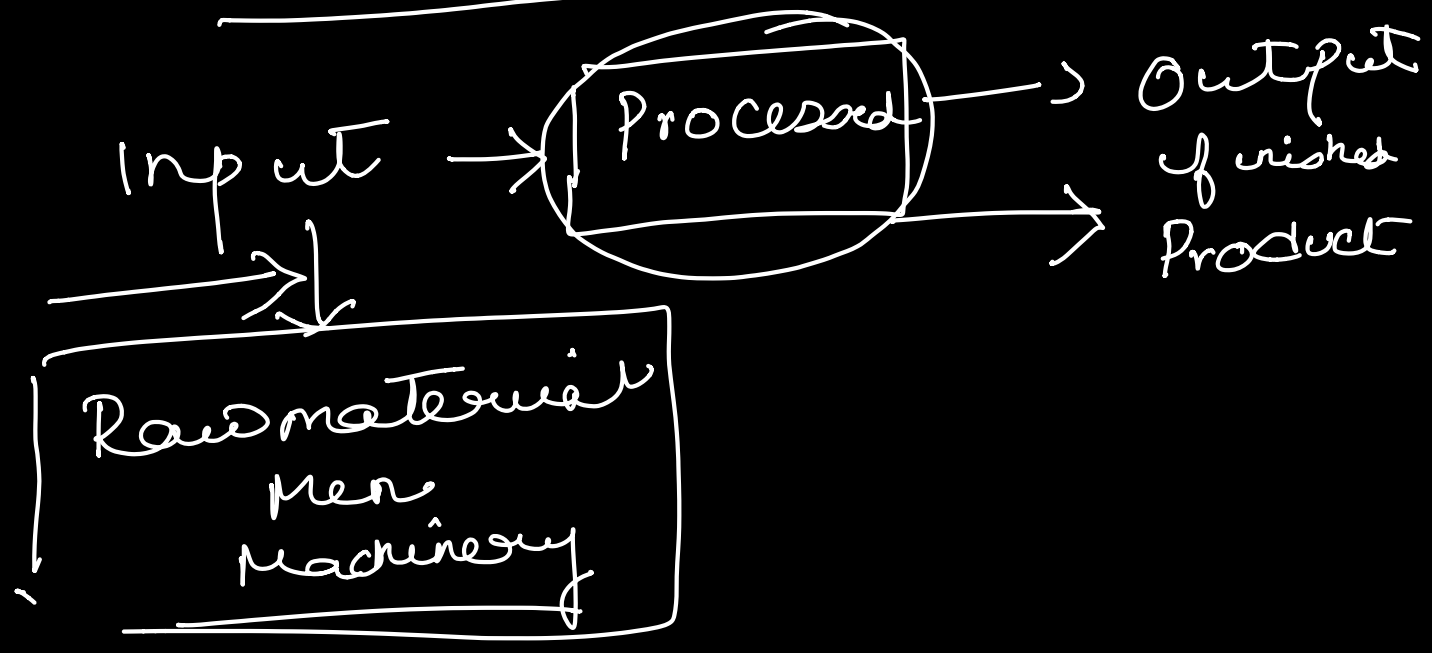
Unit 3 Production Analysis

Production



Two Factors involved in the process of production

- Fixed Factors (Constant)
  - land, building, machine Tools, equipments
- Variable Factors (varies)
  - raw material power men

Time Periods

Short Run (< 1 year)

long Run (more 1-10)

F.F — X

V.F — ✓

Laws of Returns to Scales

Laws of variables

1) Proportion
   - one variable
   - Labour
   - one variable

2) Two variables
   IsoQuant → Indifference curve.

Uses

1) calculate or work out the least cost input combination
2) long run decisions.
3) economic combinations of the inputs

SHORT RUN.

1) One Variable input

The law of Variable Proportion

As the quantity of different units of only one Factor input is increased to a given quantity of fixed factors beyond a particular point, the Marginal, average & Total output eventually declines.

F.F (1 Acre land) + 5000 00 capital

Unit of Variable Input (Labour) L	T.P	A.P = T.P / L	M P ΔTP / ΔL
0	0	0	0
1	10	$\frac{10}{1} = 10$	$\frac{10}{1} = 10$
2	24	$\frac{24}{2} = 12$	$\frac{14}{1} = 14$
3	39	$\frac{39}{3} = 13$	$\frac{15}{1} = 15$
4	52	$\frac{52}{4} = 13$	= 13
5	60	$\frac{60}{5} = 12$	8
6	66	$\frac{66}{6} = 11$	6
7	70	$\frac{70}{7} = 10$	4
8	72	$\frac{72}{8} = 9$	2
9	72	$\frac{72}{9} = 8$	0
10	70	$\frac{70}{10} = 7$	-2

1st

The law of increasing returns

The law of diminishing returns

The stage of negative returns

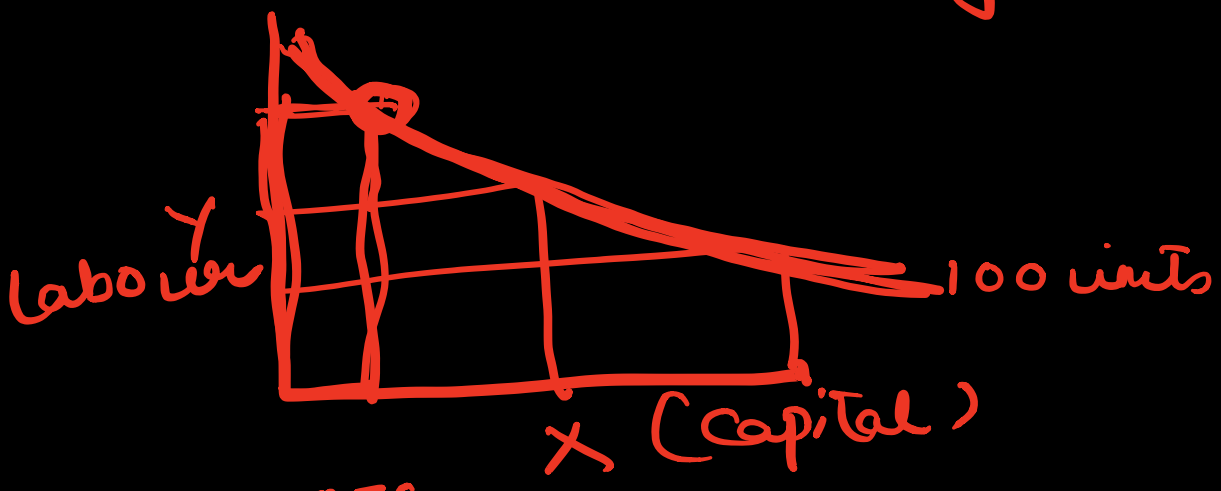
Production Analysis

Short Run Production function

1) one variable — Laws of V.P

2) Two variable — Iso Quants / Indifference

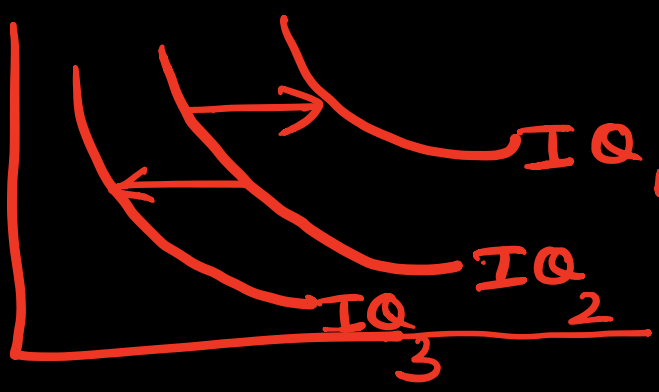
Similar Quantity



MRTS

	X	Y	Units
A →	1	3	5
B →	2	1	5

Iso Quant Maps



long Run Production Function

F.F V.F

laws of Returns To Scale.

Scale	F.F	V.F	T.P	M.P/F.F
1	1 Acre land	+ 3 labour	5	5
2	2 Acre land	+ 5 labour	12	7
3	3	+ 7	21	9
4	4	+ 9	32	11
5	5	11	43	11
6	6	13	54	11
7	7	15	63	9
8	8	17	70	7

3 Stage

1) Increasing Returns
2) Constant Returns
3) Diminishing Returns