Theory of Production

Production is the primary step for SS creation.

Production is an activity carried out under the control and responsibility of an institutional unit that uses inputs of labour, capital and goods and services to produce outputs of goods and services.

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Factors of Production

1) Land $L = t$

2) Labour $= A$

3) Capital $= K$

4) Organisation $= 0$

Production function $= Q = f(L, A, K, 0)$.

short run
$$Q = f(\bar{L}, A, \bar{K}, \bar{0})$$

long run
$$Q = f(L, A, K, 0)$$

Types of Production

1. Total Product $= TP \neq$

2. Average " $= AP = \dfrac{TP}{L/A/K/0}$

$\qquad = AP_L, AP_A, AP_K, AP_0$

3. Marginal " $= MP = \dfrac{\Delta (TP)}{L/A/K/0}$ 🌀

$\qquad = MP_L, MP_A, MP_K, MP_0.$

Given that,

$$Q = f\left(L, A, \bar{K}, \bar{0}\right)$$

Units of Labor	TP_A	AP_A	MP_A
0	0	0	0
1st	2000	2000	2000
2nd	3000	1500	1000
3rd	3500	1167	500
4th	3800	980	300
5th	3900	780	100

Graphically,

Returns to scale

I) $2(L, A, K, O)$.
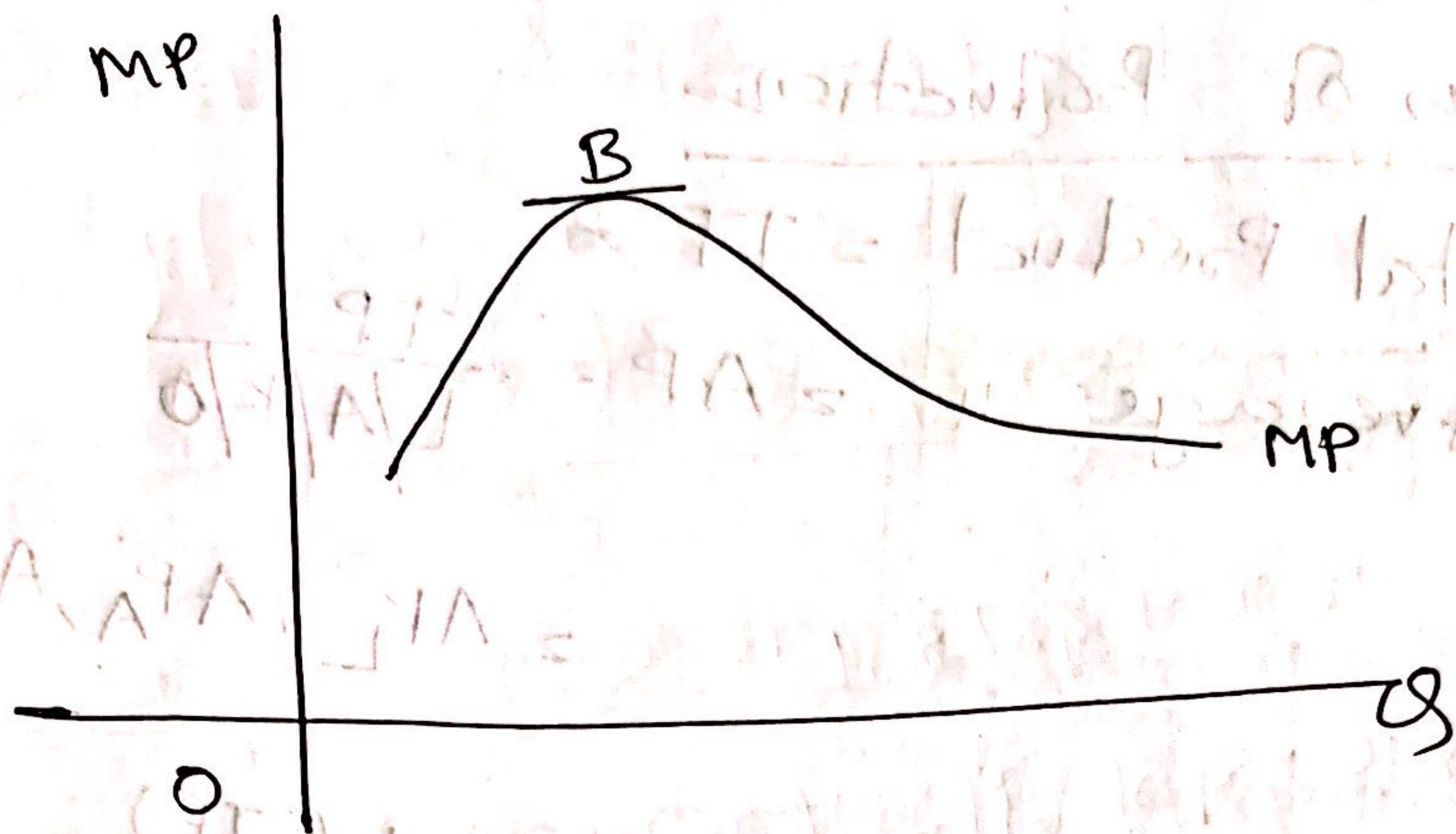
Law of Diminishing MP — short run — $f(L, A, \overline{K}, \overline{O})$

Returns to scale — long " — $f(L, A, k, o)$
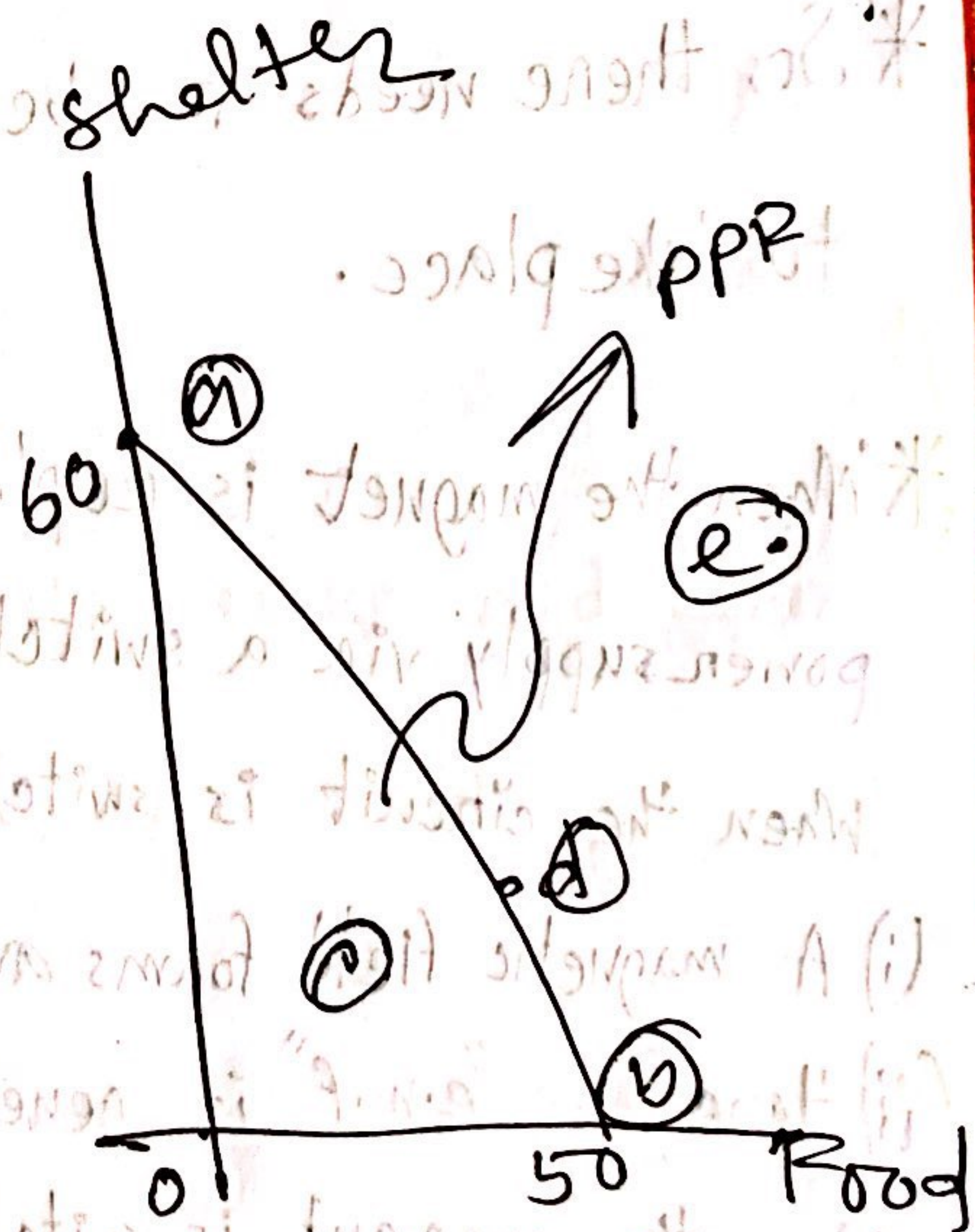
Case: 1: $2(L, A, K, O) = 4.5Q = IRS$

Case: 2: $5(L, A, K, O) = 5Q = CRS$

Case: 3: $4(L, A, K, O) = 3Q = DRS$

Production Possibility Frontier (PPF)

Possibilities - Food - Shelter

	Food	Shelter
A	50	0
B	40	15
C	45	25
Z	0	60

The economy should always be on the PPF (d), not at the two extremes (a, b), below (c) or above (e).