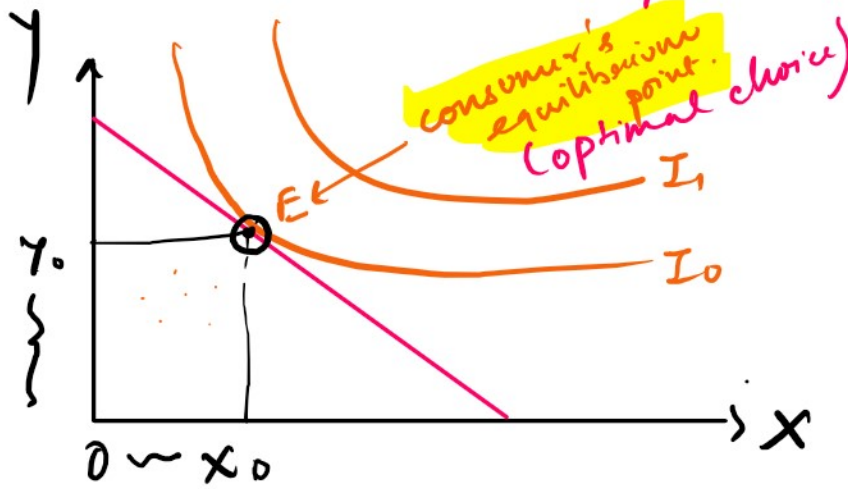


Consumer's Equilibrium

(Optimisation).



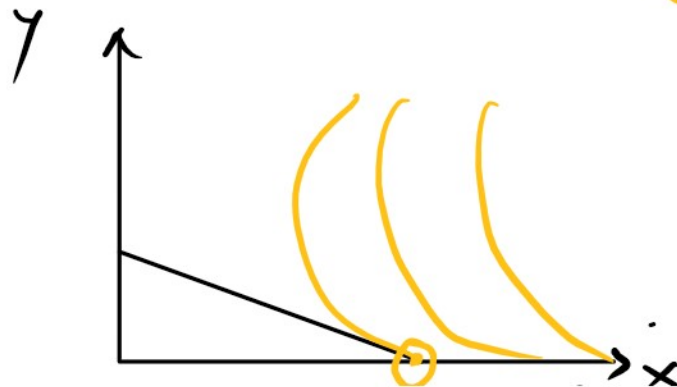
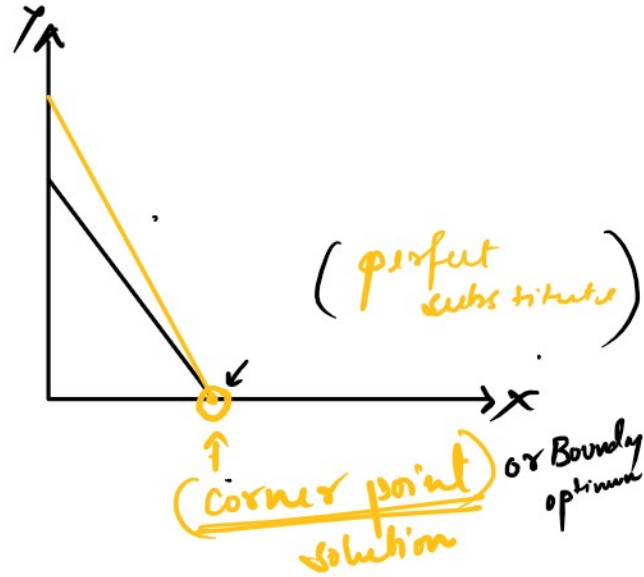
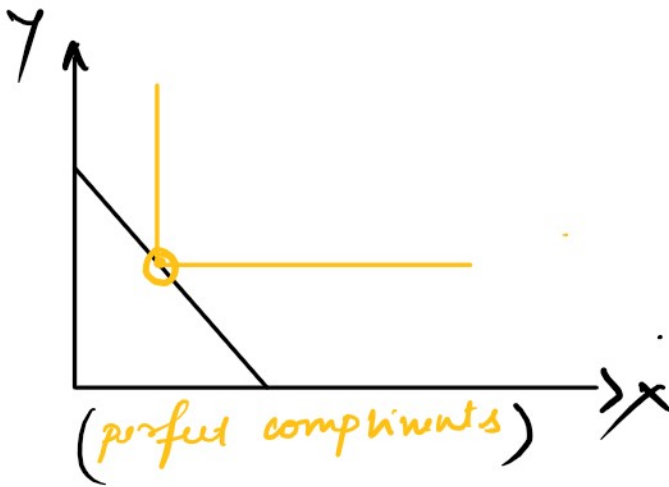
Condition for consumer's equilibrium

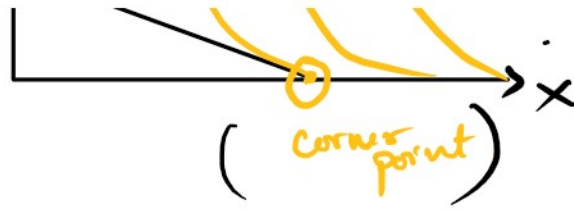
slope of I_c = slope of budget line.

$$\frac{MU_x}{MU_y} = \frac{P_x}{P_y}$$

$$MRS_{x,y} = \frac{P_x}{P_y}$$

{ Is tangency condition sufficient for a bundle to be optimum? }





Reference: Hal Varian (Intermediate Microeconomics)

Conclusion:

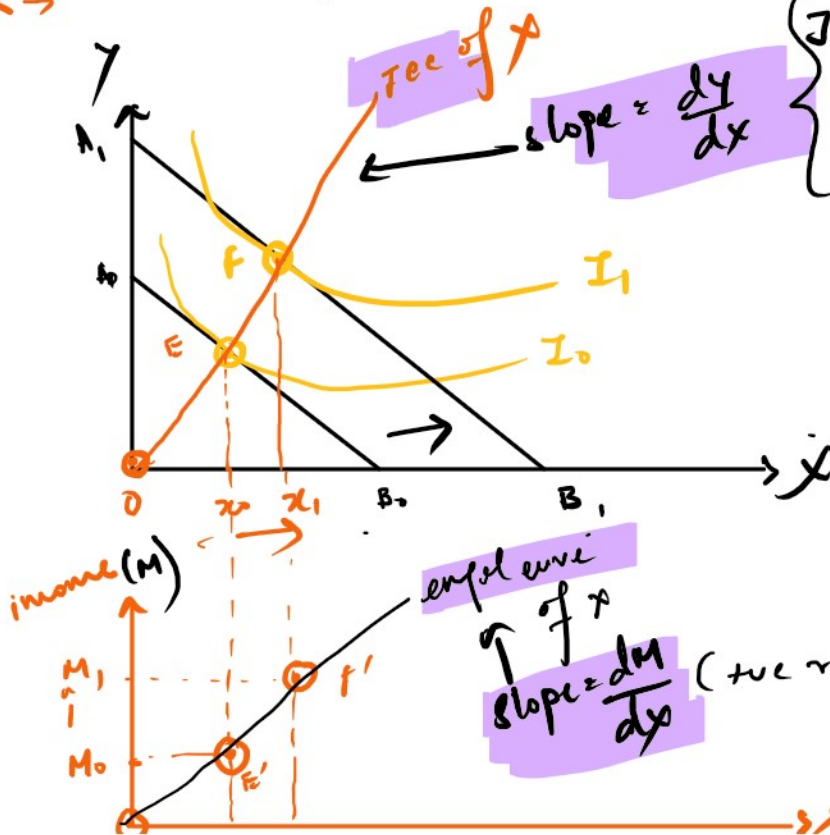
Tangency condition is a ~~set~~ necessary condition but not a sufficiency condition.

In come Consumption Curve (Ice)

(and derivation of Engel curve)

① Ice and Engel curve for Normal Goods.

↓ Those goods demand for which increases with increase in income.



$\checkmark P_x, P_y$
 $\checkmark M_0 \rightarrow x_0, y_0$
 $\checkmark M_1 \rightarrow x_1$
 (increases)

↑ slope = $\frac{dM}{dx}$ (true relation b/w x and M)
 $x \rightarrow$ Normal good.

x consumption



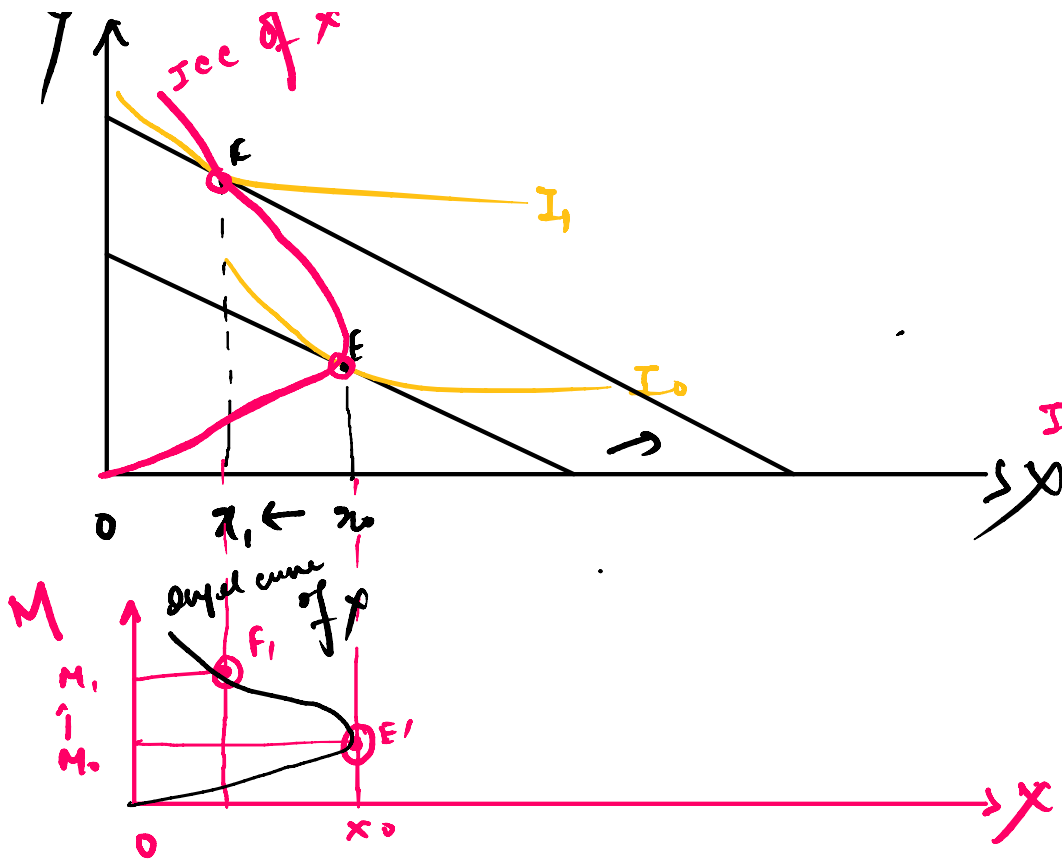
Def of ICC: Income Consumption Curve of a consumer can be defined as the locus of all those points each of which shows different alternative combinations of equilibrium purchase of commodities x and y , when price of the two commodities are constant, only the income of the consumer increases.

Defn of Engel curve: It is defined as the locus of all those points each of which shows different alternative combinations of the demand of a commodity and the income of the consumer.
 i.e. It shows how equilibrium consumption of a commodity say x changes with the change in income of the consumer when prices of the goods are given.

(ii) x is an inferior good \Rightarrow shape of ICC of x & Engel curve of x .

\uparrow ICC of x

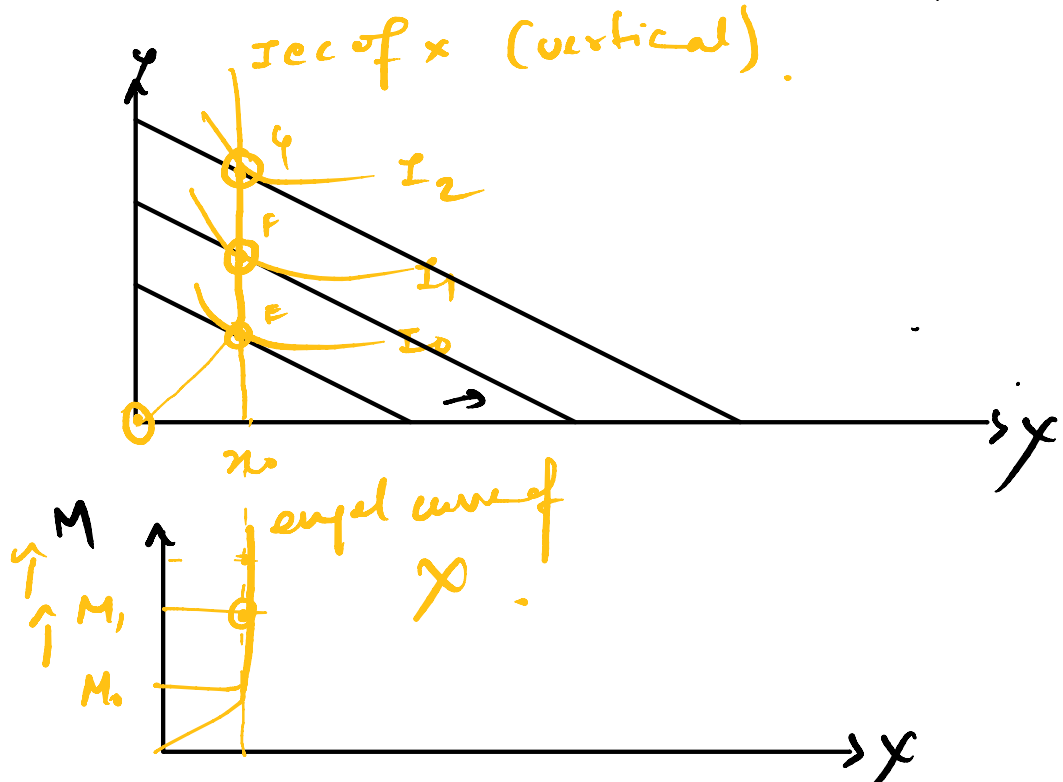
$x_1 \rightarrow x_0$

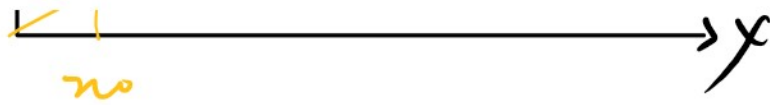


$(M_0 \rightarrow x_0$
 $\rightarrow M_1 \rightarrow x_1$
 (invr)

In case of inferior good X
 ICC is backward bending.
 \downarrow
 engel is \searrow .

Case 3 : Neutral good X
 (with income change & consumption remains unchanged)

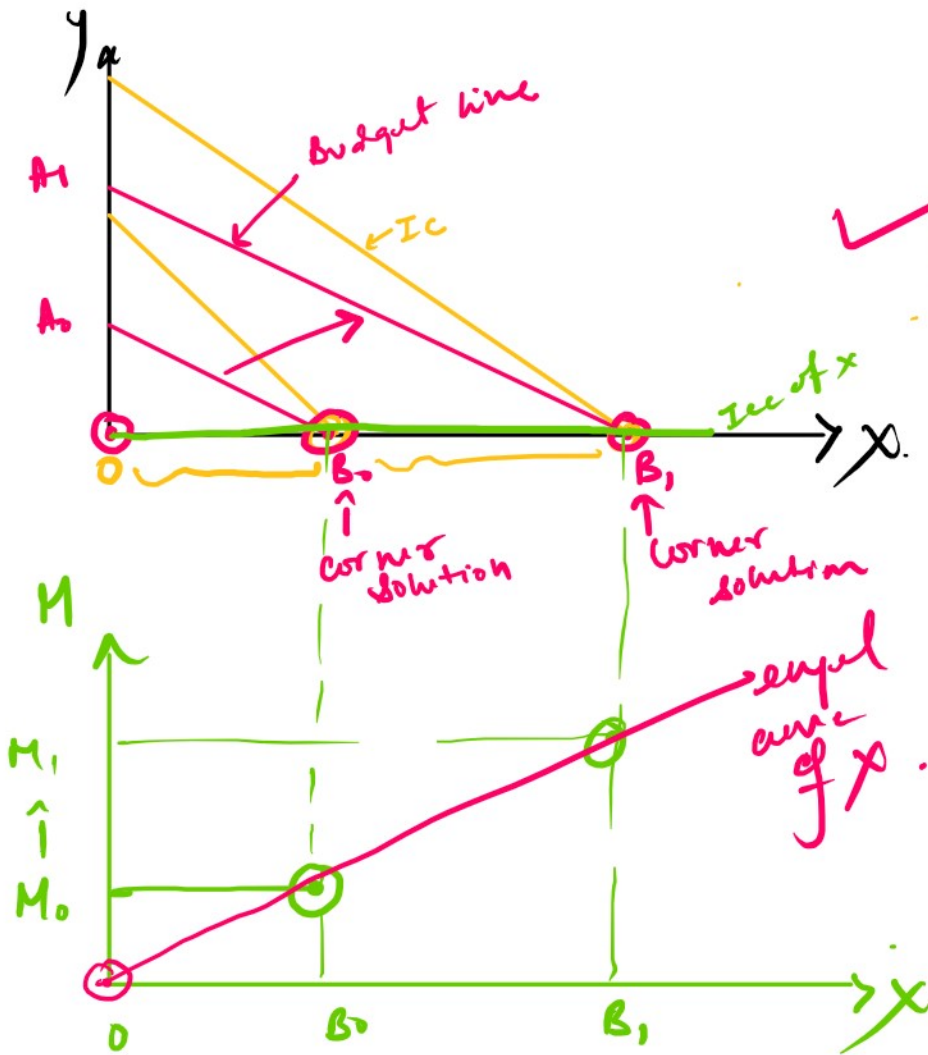




(IV) Perfect Substitutes

$P_x < P_y$

$\frac{P_x}{P_y} < \text{slope of IC}$



$M_0 \rightarrow M_1$
 $A_0 B_0 \quad A_1 B_1$

IC in case of perfect substitutes

is a horizontal line coinciding with x-axis when $P_x < P_y$.

and equal curve is upward sloping straight line through origin.

Budget line

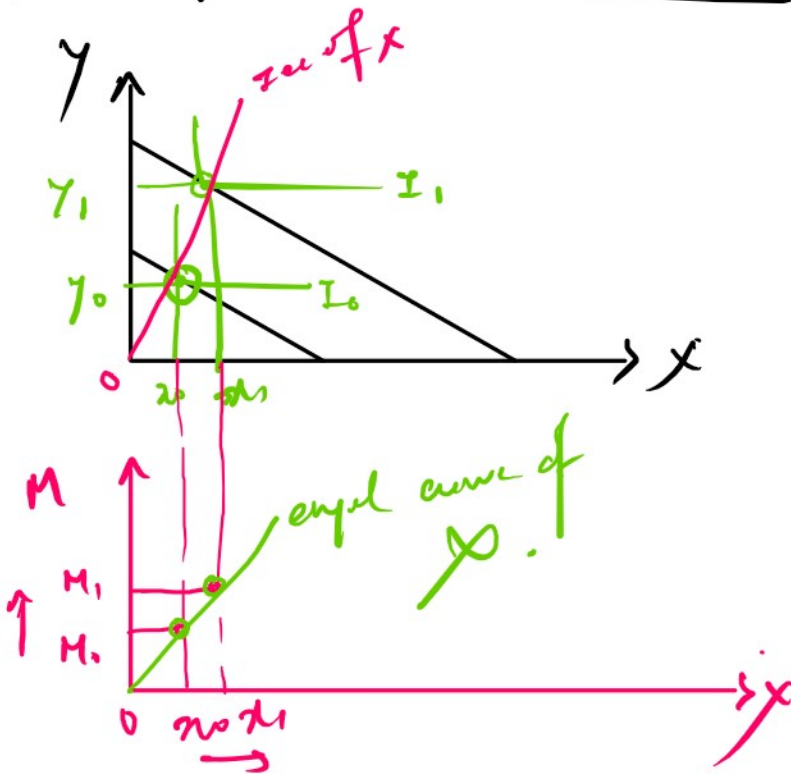
$M = x \cdot P_x + y \cdot P_y$

in case of P.S when $P_x < P_y \Rightarrow y = 0$

$\therefore m = x \cdot p_x$
 slope of output $\rightarrow \frac{dm}{dx} = p_x > 0$
 curve -

(upward sloping straight line)

(v) Perfect Compliments



(Ryan Penned)
 → (Price Theory)

Amdarich and Robinfeld.

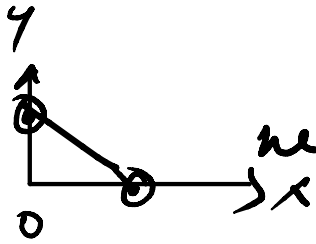
Budget line:
 $m = x p_x + y p_y$
 $m = x (p_x + p_y)$

$m = x p_x + y p_y \Rightarrow \text{slope} = -p_x/p_y$

If M, p_x, p_y are doubled

then we get $m = 2(x p_x + y p_y)$

also slope = $-\frac{p_x}{p_y}$



also slope = $-\frac{r_x}{r_y}$

we can also check the intercepts
remain unchanged.

So there will be no shift.