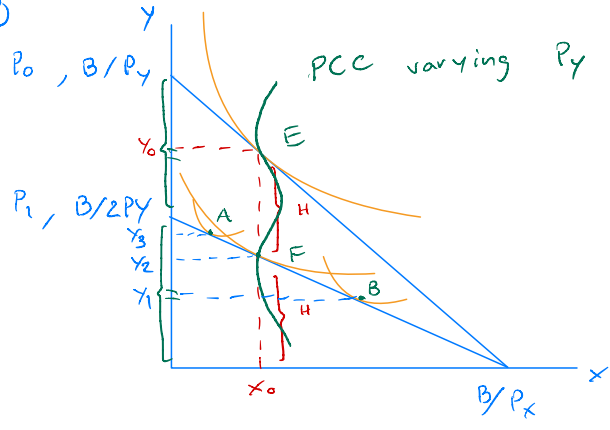
①



Calculate the price elasticity of y :

$$|n_y| = \frac{\%\Delta Y}{\%\Delta P_Y}$$

Let $P_0 = P_Y$

$P_1 = 2P_Y$

$\Delta P = P_1 - P_0 = 2P_Y - P_Y = P_Y$

$$\frac{P_1 + P_2}{2} = \frac{2P_Y + P_Y}{2} = \frac{3P_Y}{2}$$

$$\%\Delta P = \frac{P_Y}{\frac{3P_Y}{2}} = \frac{2}{3}$$

$\Delta Y = Y_1 - Y_0$; $Y_1 = \frac{Y_0}{2}$

$= \frac{Y_0}{2} - Y_0 = \frac{-Y_0}{2}$

$$\frac{Y_1 + Y_0}{2} = \frac{\frac{Y_0}{2} + Y_0}{2} = \frac{3Y_0}{4}$$

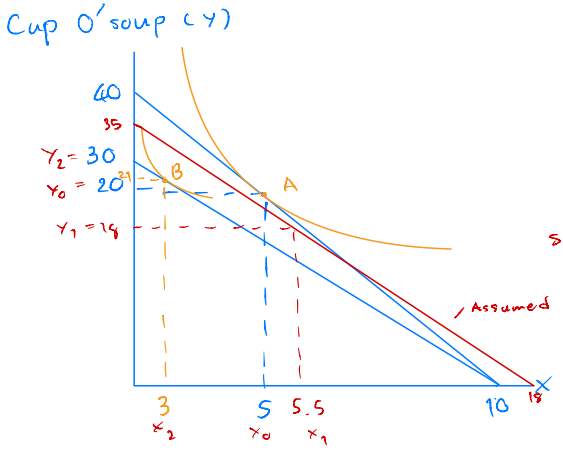
$$\%\Delta Y = \frac{\frac{-Y_0}{2}}{\frac{3Y_0}{4}} = -\frac{4}{6} = -\frac{2}{3}$$

$$|n_y| = \left|\frac{-2/3}{2/3}\right| = |-1| = 1 \quad (\text{from E to F})$$

$|n_y| < 1$ (from E to A) b/c at Y_3 there is alot Y already

$|n_y| > 1$ (from E to B) b/c at Y_1 there is small amount Y

(2) a.)



$P_X X + P_Y Y = B$

$6X + 1.5Y = 60$

at $Y = 0$ | at $X = 0$

$6X = 60$ | $1.5Y = 60$

$X = 10$ | $Y = 40$

spend equally $= \frac{60}{2} = 30$

$6X = 30$ | $1.5Y = 30$

$X = 5$ | $Y = 20$

b.) $P_Y = 1.5$

$P_Y' = 2$

$6X + 2Y = 60$

at $Y = 0$ | at $X = 0$

$X = 10$ | $Y = 30$

spend 30% on X

$(0.3)(60) = 18$

$6X = 18$ | $2Y = 42$

$X = 3$ | $Y = 21$

C.) As a result of Price $_Y$ increase, the consumption of Cup O' soup increase P

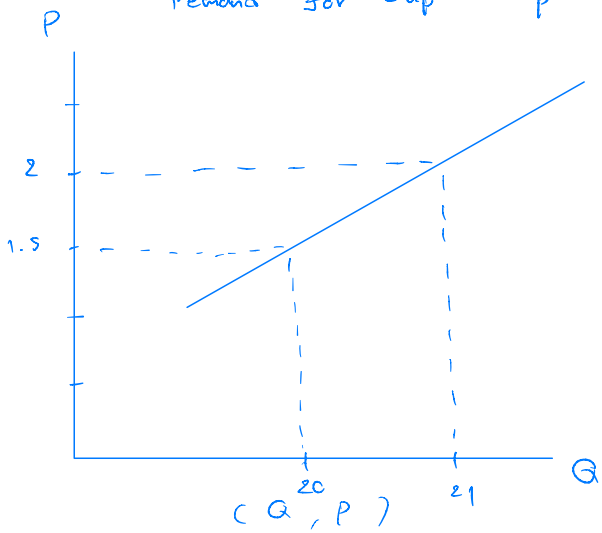
Substitution effect $\begin{cases} \Delta X = X_1 - X_0 = 5.5 - 5 = 0.5 \\ \Delta Y = Y_1 - Y_0 = 18 - 20 = -2 \end{cases}$

Income effect $\begin{cases} \Delta X = X_2 - X_1 = 3 - 5.5 = -2.5 \\ \Delta Y = Y_2 - Y_1 = 21 - 18 = 3 \end{cases}$

Total effect $= \Delta X = 0.5 + (-2) = -2.0$

$\Delta Y = -2 + 3 = 1$

d.) Demand for Cup O' Soup (D)



(Q , P)

Old ⇒ (20, 1.5)

New ⇒ (21 , 2)

∴ Cup O' soup is giffen good because as P ↑ , Q ↑ that is contradict to the law of demand that as P ↑ , Q_D ↓

(3)

if the consumer's income increase and doesn't buy les that is mean no change in quantity of purchasing therefove the commodity is normal goods.

On the other hand, due to the change in price, two effects are fromed : subsititution and income effect. So a vise in price reduce purchasing power, forcing consumer to consume less