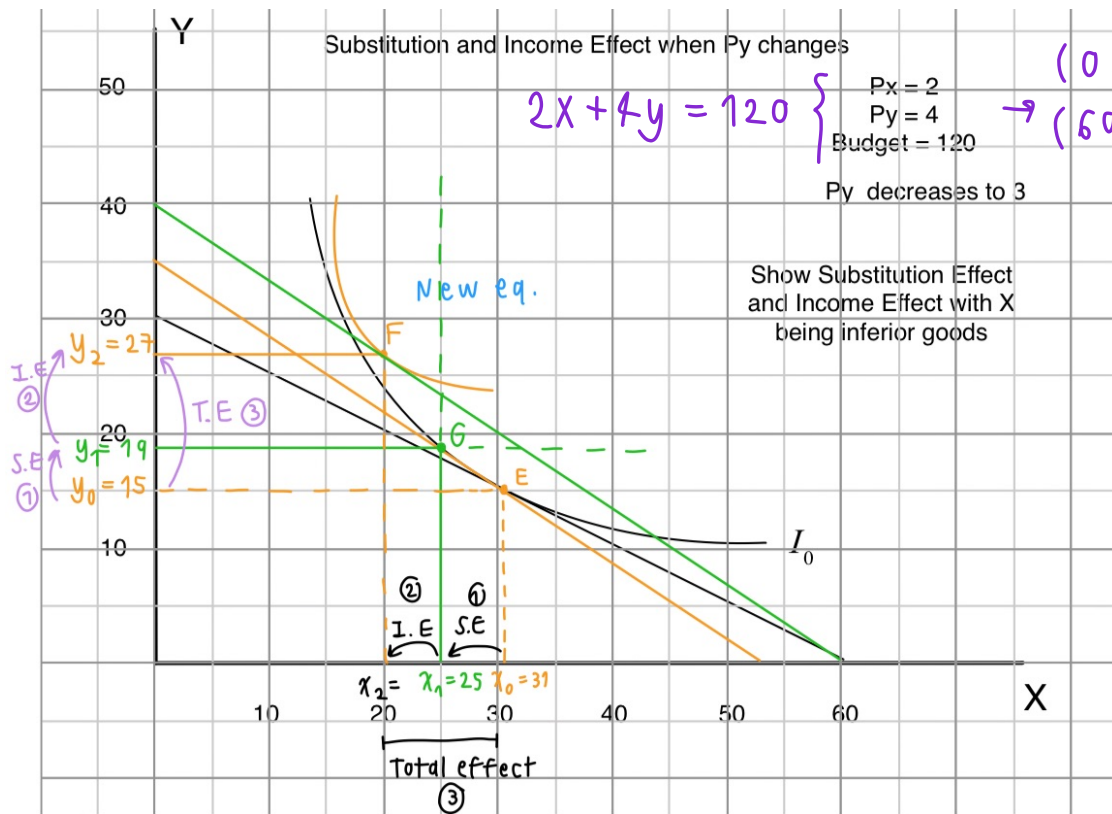




$$S.E. = \begin{cases} \Delta X = X_1 - X_0 = 25 - 31 = -6 < 0 \\ \Delta Y = Y_1 - Y_0 = 19 - 15 = 4 > 0 \end{cases}$$

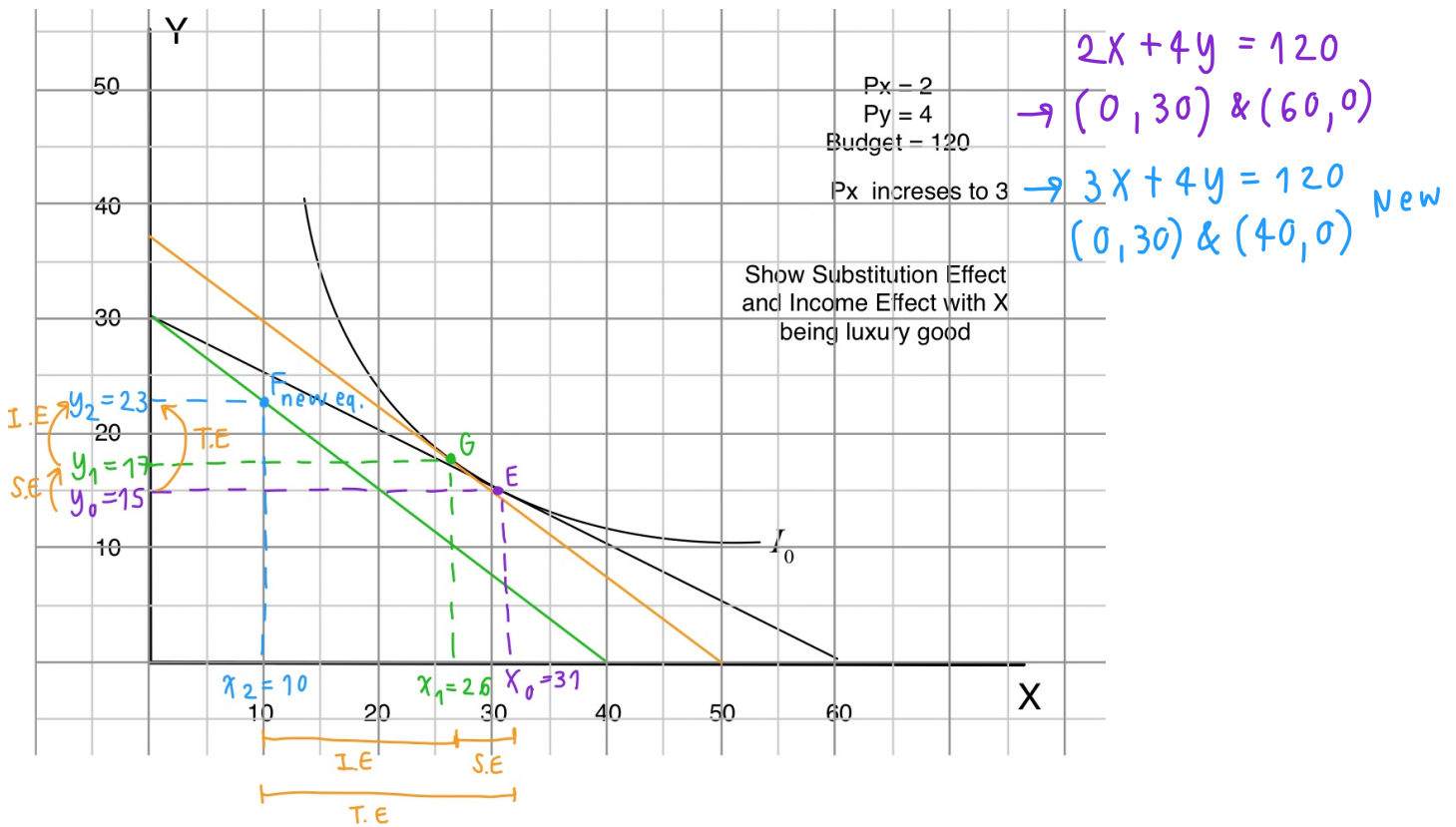
$$I.E. = \begin{cases} \Delta X = X_2 - X_1 = 20 - 25 = -5 < 0 \\ \Delta Y = Y_2 - Y_1 = 27 - 19 = 8 > 0 \end{cases}$$

$$T.E. = \begin{cases} \Delta X = X_2 - X_0 = 20 - 31 = -11 < 0 \\ \Delta Y = Y_2 - Y_0 = 27 - 15 = 12 > 0 \end{cases}$$

When P_y decrease $\rightarrow$ consume more of y & less of x ,
 meaning that x & y are substitute.

More real income $\rightarrow$ consume less of x & more of y .

(y = luxury, x = inferior)



$$S.E. = \begin{cases} \Delta X = X_1 - X_0 = 26 - 31 = -5 < 0 \\ \Delta Y = Y_1 - Y_0 = 17 - 15 = 2 > 0 \end{cases}$$

$$I.E. = \begin{cases} \Delta X = X_2 - X_1 = 10 - 26 = -16 < 0 \\ \Delta Y = Y_2 - Y_1 = 23 - 17 = 6 > 0 \end{cases}$$

$$T.E. = \begin{cases} \Delta X = X_2 - X_0 = 10 - 31 = -21 < 0 \\ \Delta Y = Y_2 - Y_0 = 23 - 15 = 8 > 0 \end{cases}$$

When P_x increases $\rightarrow$ consume less of X & more of Y , meaning that X & Y are substitute.

When real income decreases $\rightarrow$ consume less of X & more of Y .
(X = luxury, Y = inferior)