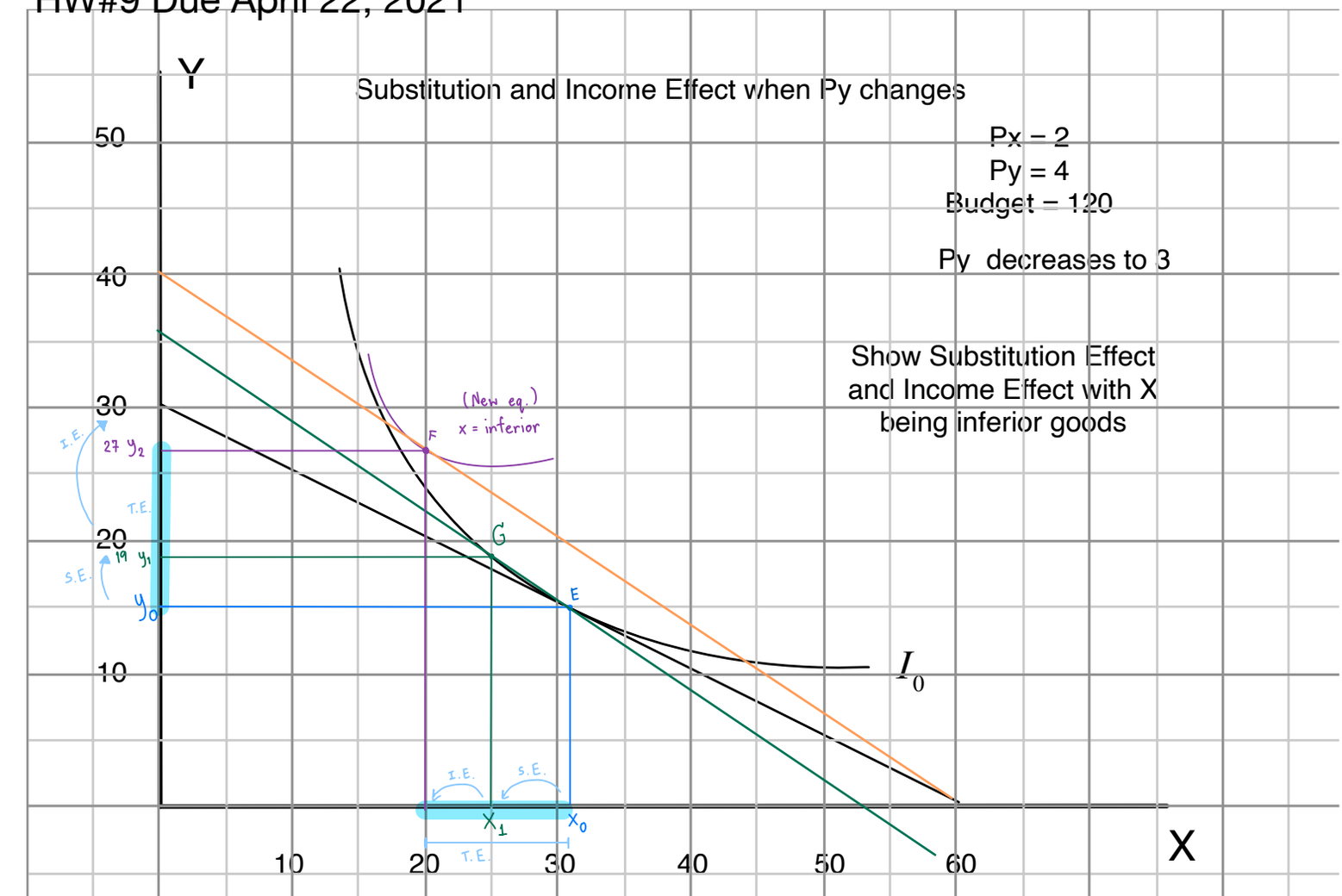
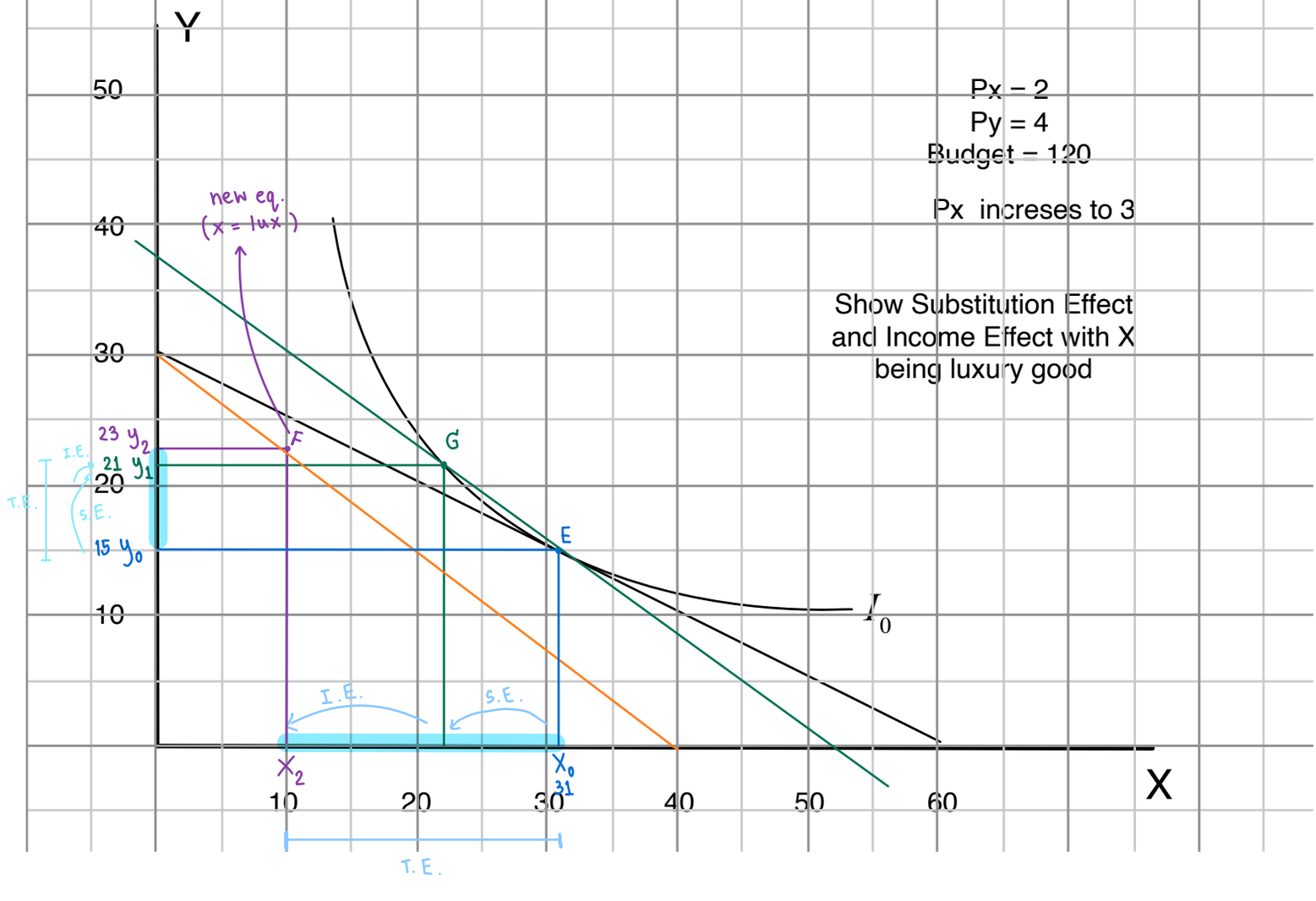
HW#9 Due April 22, 2021





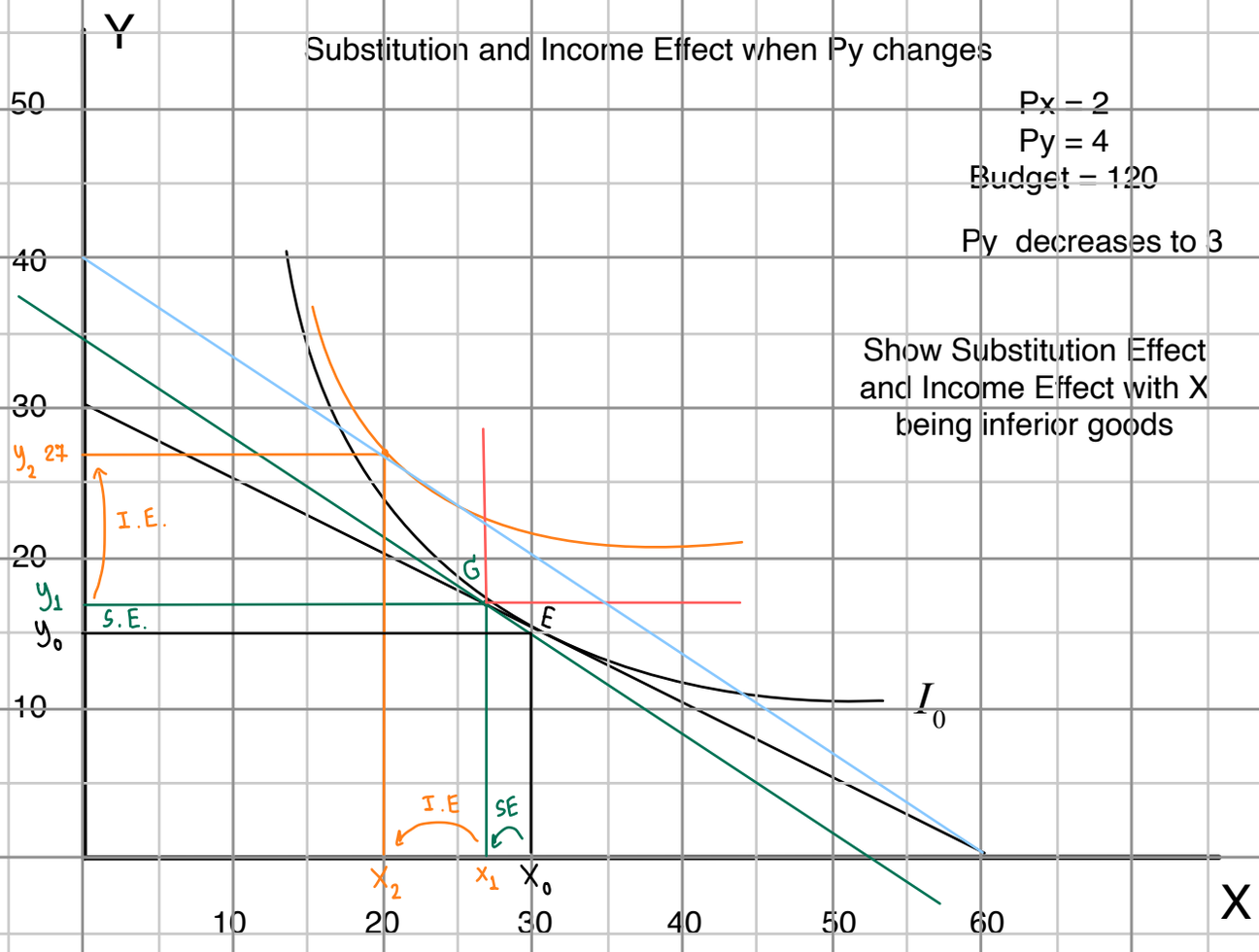
HW#9 Due April 22, 2021

Substitution and Income Effect when Py changes

Px – 2
Py = 4
Budget – 120

Py decreases to 3

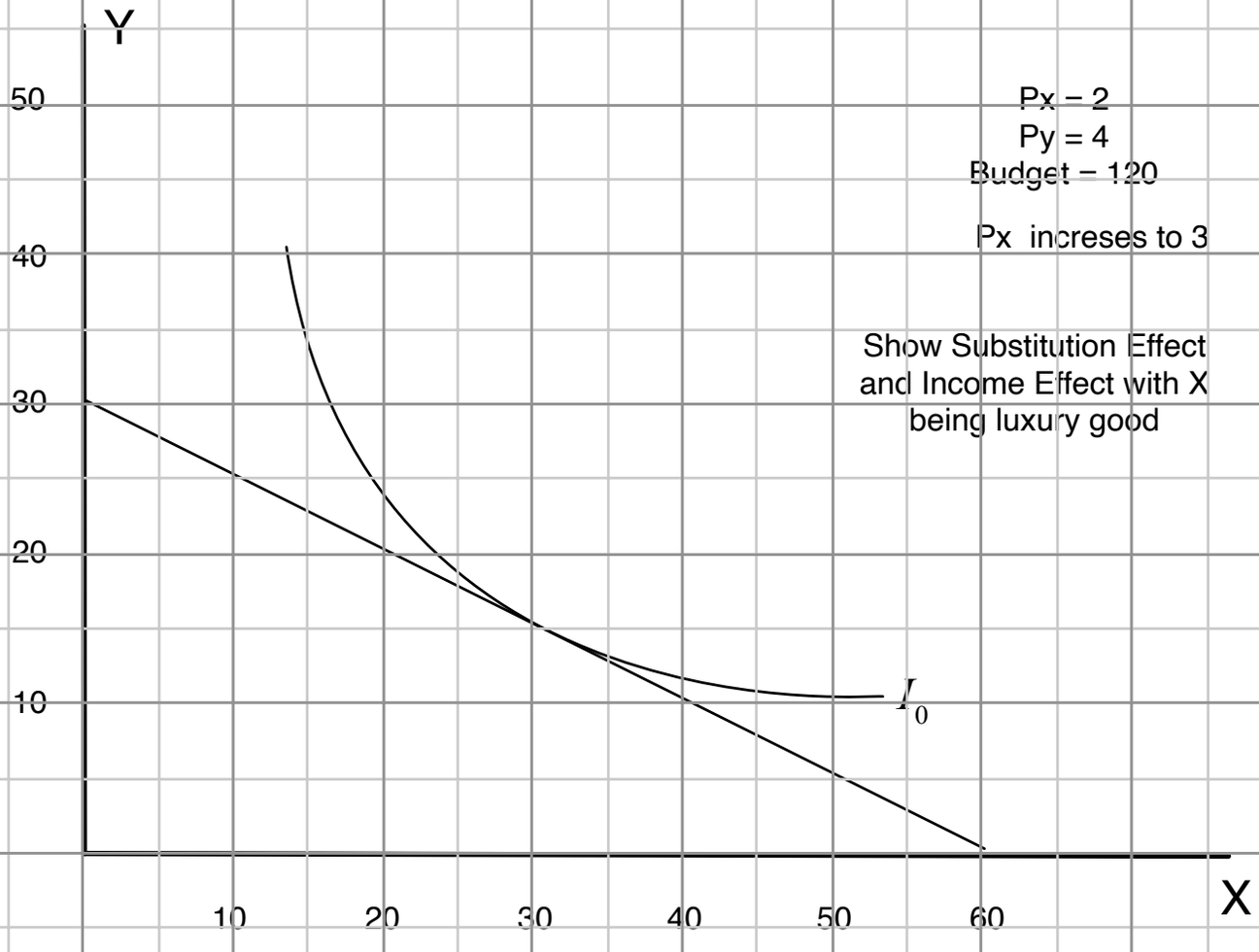
Show Substitution Effect and Income Effect with X being inferior goods

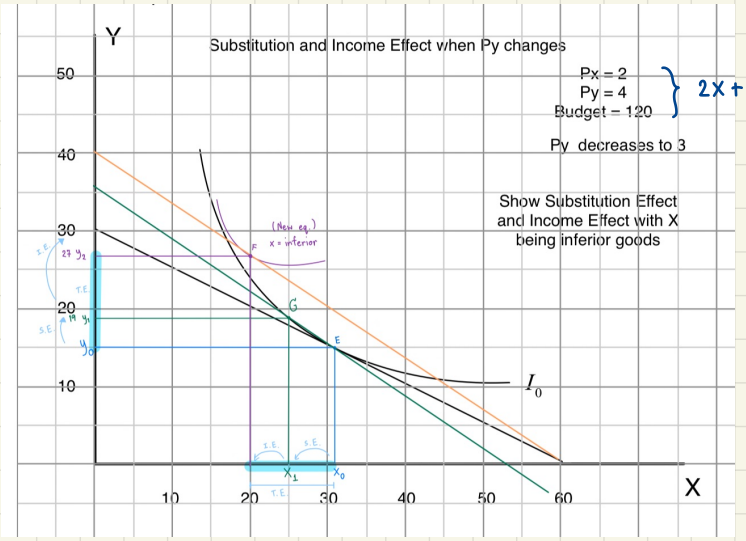


Px – 2
Py = 4
Budget – 120

Px increses to 3

Show Substitution Effect and Income Effect with X being luxury good





$2X + 4y = 120$

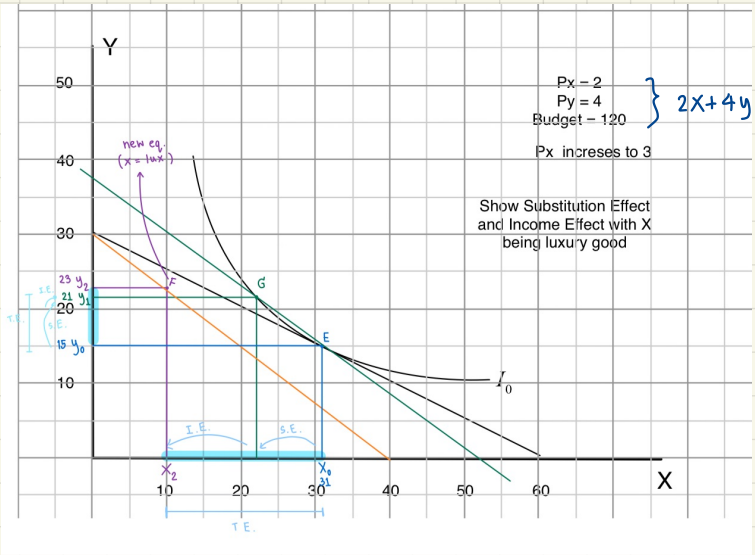
$y = 0 ; X = 60$	$2X + 3y = 120$
$X = 0 ; y = 30$	if $y = 0 ; X = 60$
	$X = 0 ; y = 40$

$$S.E. = \begin{cases} \Delta X = X_1 - X_0 = 25 - 31 = -6 < 0 \\ \Delta y = y_1 - y_0 = 19 - 15 = 4 > 0 \end{cases}$$

$$I.E = \begin{cases} \Delta X = X_2 - X_1 = 20 - 25 = -5 < 0 \\ \Delta y = y_2 - y_1 = 27 - 19 = 8 > 0 \end{cases}$$

$$T.E = \begin{cases} \Delta X = X_2 - X_0 = 20 - 31 = -11 < 0 \\ \Delta y = y_2 - y_0 = 27 - 15 = 12 > 0 \end{cases}$$

$\therefore$ $P_y \downarrow$, consume less x and more y
(x and y = subsitute product)
More real income , consume less x and more y
(x = inferior , y = luxury)



$2X + 4y = 120$

$y = 0 ; X = 60$	$3X + 4y = 120$
$X = 0 ; y = 30$	if $y = 0 ; X = 40$
	$X = 0 ; y = 30$

$$S.E. \begin{cases} \Delta X = X_1 - X_0 = 22 - 31 = -9 < 0 \\ \Delta y = Y_1 - Y_0 = 21 - 15 = 6 > 0 \end{cases}$$

$$I.E. \begin{cases} \Delta X = X_2 - X_1 = 10 - 22 = -12 < 0 \\ \Delta Y = Y_2 - Y_1 = 23 - 21 = 2 > 0 \end{cases}$$

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

$\therefore$ Px $\uparrow$, consume less x and more y
(x and y = subsitute product)
Less real income, consume less x and more y
(x = luxury, y = inferior)