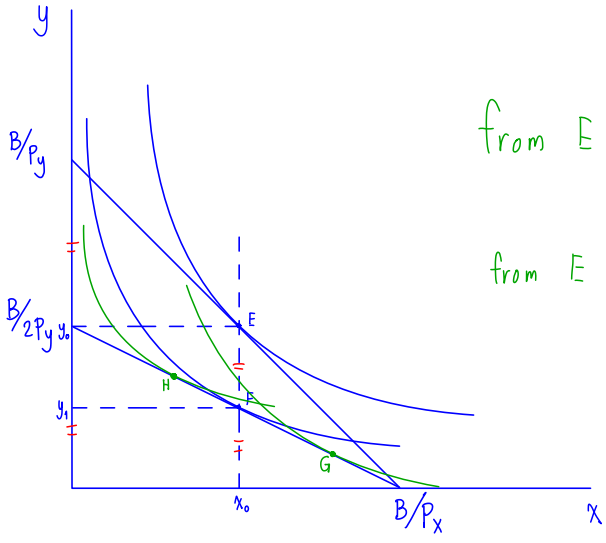
#1 Demonstrate how PCC with varying price Py, (Px and Income are fixed) can give us the price elasticity of Y to be equal to, less than, or greater than 1 in absolute value



from E to G, we can see that $|n_y| > 1$

from E to H, we can see that $|n_y| < 1$

use midpoint method

$P_0 = P_x$

$P_1 = 2P_x$

$2P_y - P_y = P_y$

$$\% \Delta P_y = \frac{\Delta P_y}{\frac{2P_y + P_y}{2}} = \frac{P_y}{\frac{3}{2}P_y} = \frac{2}{3}$$

$y_1 = \frac{y_0}{2}$

y_0

$$\% \Delta y = \frac{\Delta y}{\frac{y_1 + y_0}{2}} = \frac{-\frac{y_0}{2}}{\frac{\frac{y_0}{2} + \frac{2y_0}{2}}{2}} = \frac{-\frac{y_0}{2}}{\frac{3y_0}{4}} = -\frac{2}{3}$$

$$|n_y| = \frac{\% \Delta y}{\% \Delta P_y} = \frac{-\frac{2}{3}}{\frac{2}{3}} = |-1| = 1$$

#2

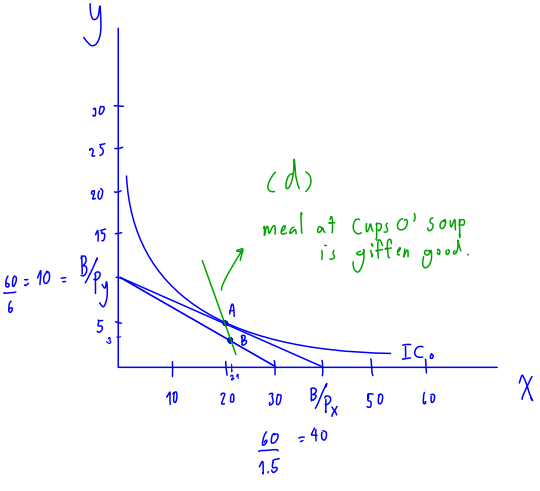
7. A college student has two options for meals: eating at the dining hall for $6 per meal, or eating a Cup O' Soup for $1.50 per meal. Her weekly food budget is $60.

   a. Draw the budget constraint showing the trade-off between dining-hall meals and Cups O' Soup. Assuming that she spends equal amounts on both goods, draw an indifference curve showing the optimum choice. Label the optimum as point A.

   b. Suppose the price of a Cup O' Soup now rises to $2. Using your diagram from part (a), show the consequences of this change in price. Assume that our student now spends only 30 percent of her income on dining-hall meals. Label the new optimum as point B. 18 $ = din 42 $ = Soup.

   c. What happened to the quantity of Cups O' Soup consumed as a result of this price change? What does this result say about the income and substitution effects? Explain.

   d. Use points A and B to draw a demand curve for Cup O' Soup. What is this type of good called?



(d) meal at Cups O' soup is giffen good.

B = 60 $\quad 1.5x + 6y = 60$

$P_x = 1.50$ (Soup)

$P_y = 6$ (dining hall)

(A) spend half of each goods

$6y = \frac{1}{2} \times 60$ | $1.5x = \frac{1}{2} \times 60$

$y = 5$ | $x = 20$

$(x, y) = (20, 5)$ = point A

(B) new price

$2x + 6y = 60$

when $y = 0$, $x = 30$

when $x = 0$, $y = 10$

Spend 30% of Income on dining halls

$6y = \frac{30}{100} \times 60$

$y = 3$

Spend 70% of Income / the rest on Soup. (2 $)

$2x = \frac{70}{100} \times 60$

$x = 21$

Point P at $(x, y) = (21, 3)$

(c) As a result of rising price of Soup, consumption of soup increased by 1 unit.

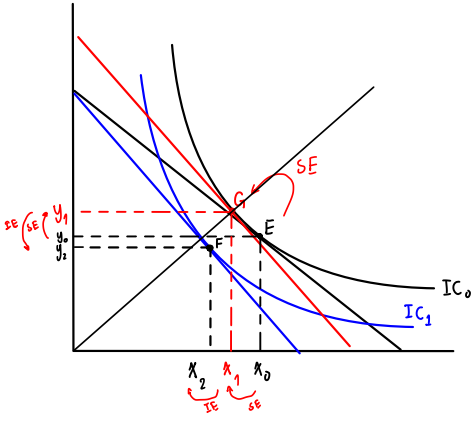
As a result of substitution effect, the consumption of soup should have decreased. However, the consumption of soup has increased, which means that the income effect lead to increas of consumption. Therefor, the meal at Cups o' soup is inferior good → decrease of real income, consumption increas.

In conclusion, income effect outweighs substitution effet.

#3

11. Economist George Stigler once wrote that, according to consumer theory, "if consumers do not buy less of a commodity when their incomes rise, they will surely buy less when the price of the commodity rises." Explain this statement using the concepts of income and substitution effects.

$I \uparrow \not\rightarrow$ Buy less
$P_x \uparrow \rightarrow$ Buy less
} - income effect
- substitution effect



$S.E = \begin{cases} \Delta x = x_1 - x_0 < 0 \\ \Delta y = y_1 - y_0 > 0 \end{cases}$

$I.E = \begin{cases} \Delta x = x_2 - x_1 < 0 \\ \Delta y = y_2 - y_1 < 0 \end{cases}$

When Price change in such a way that x is relatively more expensive, the SE is always $\rightarrow \Delta x < 0$ & $\Delta y > 0$

From G to F, x and y are normal goods b/c real income decrease, the consumer consumes less of x & y

Total Effect

$TE = \begin{cases} \Delta x = x_2 - x_0 < 0 \\ \Delta y = x_2 - x_0 < 0 \end{cases}$

$\therefore$ when Price increases, People will consume less of x