#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

#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.

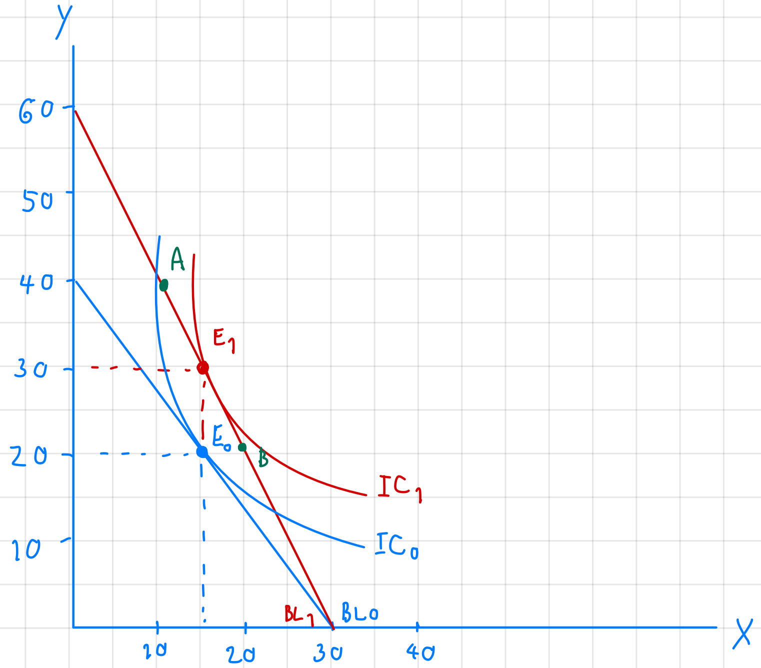
   c. What happened to the quantity of Cups O' Soup consumed as a result of this price change? What does this result say about the income and substitution effects? Explain.

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

#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.

1



Assume that there are 2 goods ; x & y

- Price of x = 4 \$
- Price of y = 3 \$
- Income = 120 \$

BL_0 : $4x + 3y = 120$

Intially, the consumer consumes at the bundle E_0 where he consumes 15 units of x and 20 units of y.

Suppose that the price of y decreases to 2 \$ while price of x and income remain unchanged. the budget line changes to BL_1 : $4x + 2y = 120$

I want to find the point such that $\eta_y = \frac{\% \Delta Q_y}{\% \Delta P_y} = -1 \Leftrightarrow |\eta_y| = 1$

mid-point elasticity

→ With the $\% \Delta P_y = \frac{2-3}{\frac{(2+3)}{2}} = -40\%$, $\% \Delta Q_y = 40\%$ so that η_y exactly equals to -1

$$\rightarrow \% \Delta Q_y = \frac{Y_1 - Y_0}{\frac{(Y_1 + Y_0)}{2}} \times 100 = 40$$

$$= \frac{Y_1 - 20}{\frac{(Y_1 + 20)}{2}} \times 100 = 40 \quad \Rightarrow Y_1 = 80$$

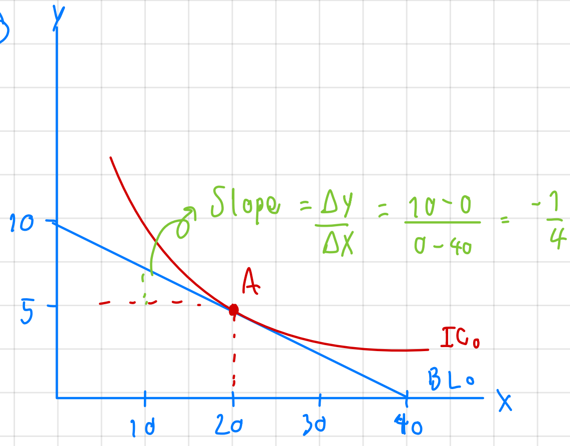
→ If the consumer consume 30 units of y, he will consume 15 units of x. (assuming he has to use all of his budget) The bundle illustrates as point E_1.

Suppose that the equilibrium occurs at point A instead of E_1. $\% \Delta Q_y$ will be greater than 40%. Therefore $|\eta_y| = \left| \frac{\Delta \% Q_y > 40\%}{40\%} \right| > 1$

If the equilibrium occurs at point B instead of E_1. $\% \Delta Q_y$ will be smaller than 40%. So, $|\eta_y| = \left| \frac{\Delta \% Q_y < 40\%}{40\%} \right| < 1$.

#2

(a)



BL_0 : $1.5x + 6y = 60$

If he wants to consume an additional unit of x, he has to sacrifice $\frac{10}{40}$ = 0.25 unit of y.
Likewise, if he want to consume an additional unit of y, $\frac{40}{10}$ units of x must be forgone.

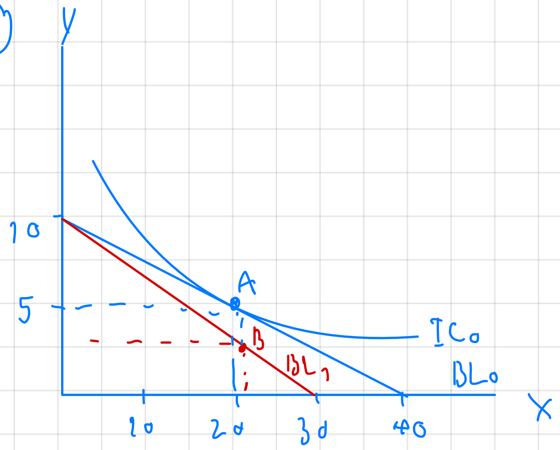
Find the point where he equally spends on both goods.

x_0 : $1.5x = 30 \rightarrow x = 20$

y_0 : $6y = 30 \rightarrow y = 5$

$\Bigg\}$ A = (20,5)

(b)



BL_1 : $2x + 6y = 60$

Suppose the student spends 30% of income on y

x_1 : $2x = 60(0.7) \rightarrow x_1 = 21$

y_1 : $6y = 60(0.3) \rightarrow y_1 = 3$

$\Bigg\}$ B = (21,3)