

#1 Demonstrate how PCC with varying price  $P_y$ , ( $P_x$  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

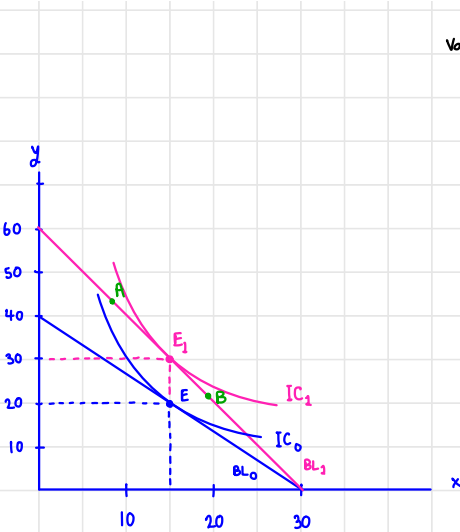
#2

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 Demonstrate how PCC with varying price  $P_y$ , ( $P_x$  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



Variable conditions:

$$P_x = 4 \$$$

$$P_y = 3 \$$$

$$B = 120 \$$$

$$BL_0: 4x + 3y = 120$$

Suppose that price of  $y$  decreases to 2 \$

$$BL_1: 4x + 2y = 120$$

$$\eta_y = \frac{\% \Delta Q_y}{\% \Delta P_y} = -1 = |\eta_y| = 1$$

$$\% \Delta P_y = \frac{2-3}{\frac{(2+3)}{2}} = -40\%$$

$$\% \Delta Q_y = 40\%$$

$$\% \Delta Q_y = \frac{y_1 - y_0}{\frac{(y_1 + y_0)}{2}} = 100 = 40$$

Suppose that equilibrium occurs at point A

instead of  $E_1$   $\% \Delta Q_y$  will be greater than 40%

$$\text{Therefore } |\eta_y| = \left| \frac{\Delta \% Q_y > 40\%}{40\%} \right| > 1$$

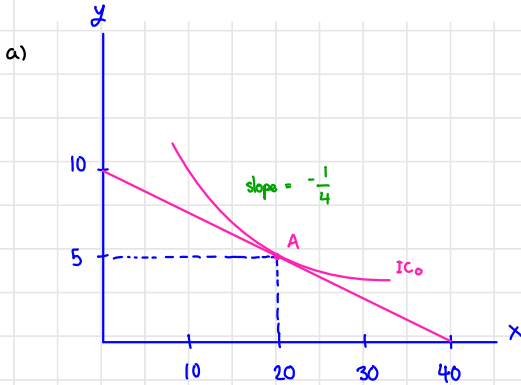
Suppose that equilibrium occurs at point B

instead of  $E_1$   $\% \Delta Q_y$  will be smaller than 40%

$$\text{Therefore } |\eta_y| = \left| \frac{\Delta \% Q_y < 40\%}{40\%} \right| < 1$$

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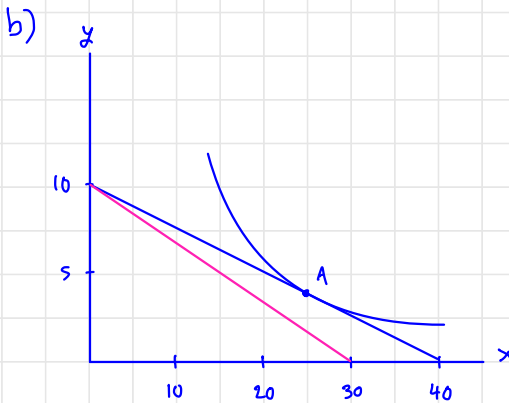
$$BL_0: 1.5x + 6y = 60$$

Equally spends on both goods

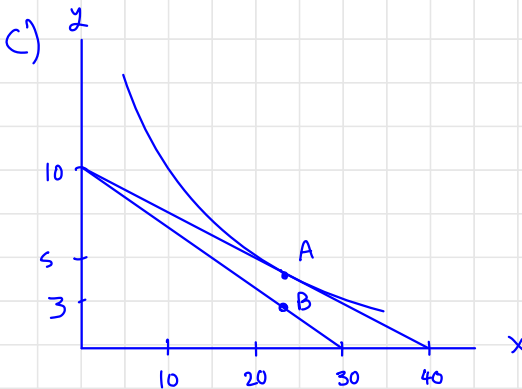
$$x_0: 1.5x = 30 \rightarrow x = 20$$

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

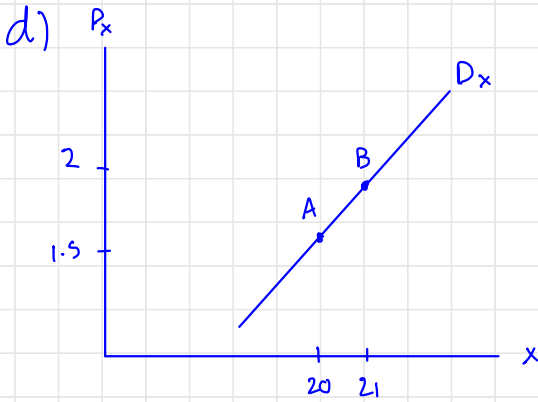
$$A = (20, 5)$$



$$BL_1 = 2x + 6y = 60$$



substitute effects



Giffen goods

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