

#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

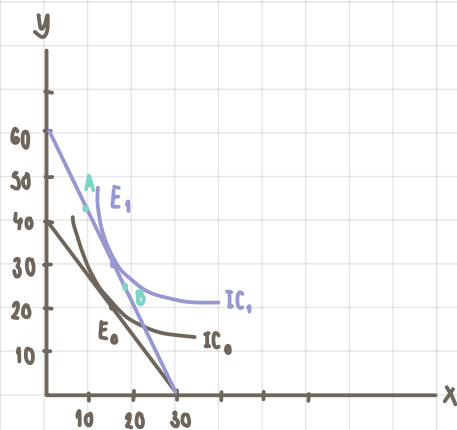
#2

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.
- 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.
 - 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.
 - 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.
 - 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



Assume that there are 2 goods ; x & y

- Price of $x = 4$ \$

- Price of $y = 3$ \$

- Income = 120 \$

$BL_0: 4x + 3y = 120$

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

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

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

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

$$y_1 = 30$$

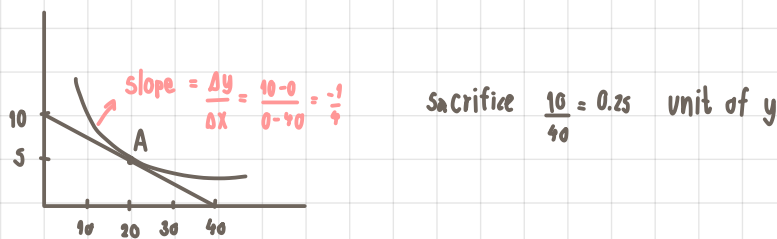
$$\therefore |\eta_y| = \left| \frac{\Delta \% Q_y > 40\%}{40\%} \right| > 1$$

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

#2

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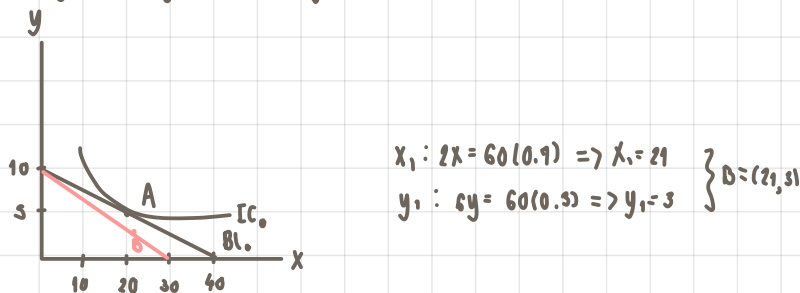
a)



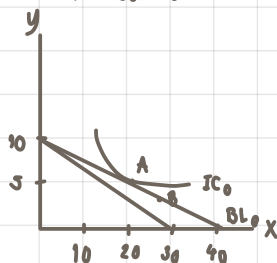
Find the point where he equally spends on both goods.

$$\begin{aligned} X_0 : 1.5X &= 30 \Rightarrow X = 20 \\ Y_0 : 6Y &= 30 \Rightarrow Y = 5 \end{aligned} \quad \left. \vphantom{\begin{aligned} X_0 : 1.5X &= 30 \\ Y_0 : 6Y &= 30 \end{aligned}} \right\} A = (20, 5)$$

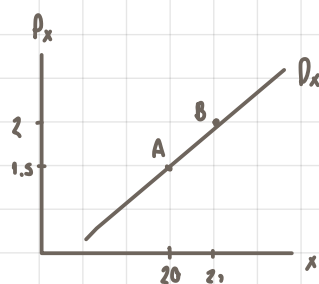
b)



c)

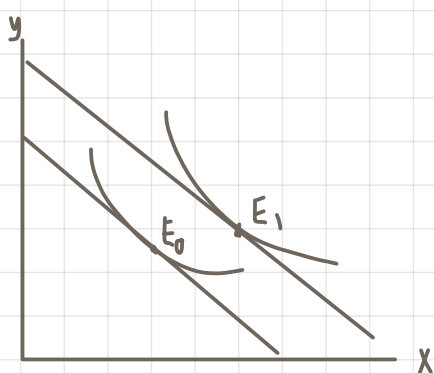


d)

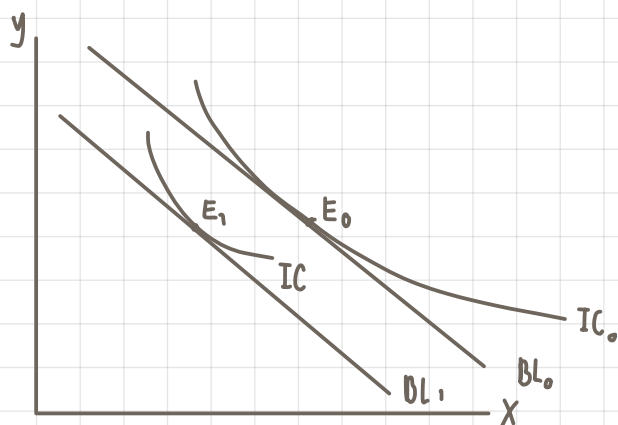


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The income effect is nonnegative
The good is normal.



It can be seen that the consumer will buy less of x
 $\therefore$ The income effect is nonnegative