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#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.

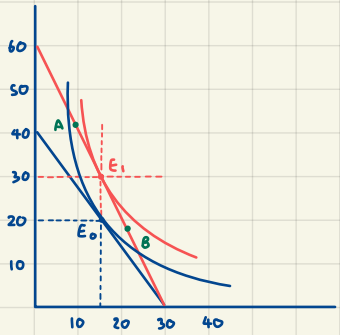
   c. What happened to the quantity of Cups O' Soup consumed as a result of this price change? What does this result say about the income and substitution effects? Explain.

   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 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



Assume $P_x = 4$

$P_y = 3$

Income $= 120$

$4x + 3y = 120$

Find equilibrium

x_0 : $4x = 60 \Rightarrow x = 15$

y_0 : $3y = 60 \Rightarrow y = 20$

Suppoes P_y decrease to 2, while P_x and income remain unchanged

So, new budget line is $4x + 2y = 120$

Find point that $\eta_y = -1 \Leftrightarrow |\eta_y| = 1$

By midpoint method $\eta_y = \frac{\%\Delta Q_y}{\%\Delta P_y}$

$$\%\Delta P_y = \frac{(P_{x_1} - P_{x_0})}{(P_{x_1} + P_{x_0})/2} = \frac{2-3}{\frac{(2+3)}{2}} = -40\%$$

$$\%\Delta Q_y = \frac{\frac{(y_1 - y_0)}{(y_1 + y_2)/2} \times 100}{} = 40$$

$$= \frac{y_1 - 20}{(y_1 + 20)/2} \times 100 = 40$$

$y_1 = 30$

$\therefore$ If consumer consume 30 unit of y, he will consume 15 unit of x

At A $\%\Delta Q_y > 40\%$

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

At B $\%\Delta Q_y < 40\%$

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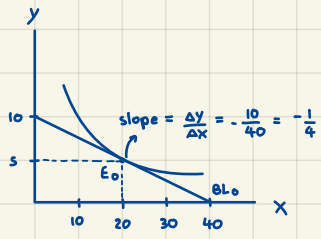
(a)



$1.5x + 6y = 60$

If he want to consume additional unit of x

he has to sacrifice $\frac{10}{40} = 0.25$ unit of y

If he want to consume additional unit of y

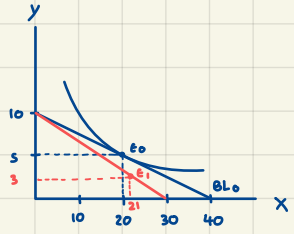
he has to sacrifice $\frac{40}{10} = 4$ unit of

Find equilibrium

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

$6y = 30 \Rightarrow y = 5$

(b)



BL_1 : $2x + 6y = 60$

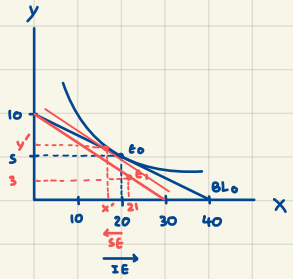
Student spend only 30% of income on y

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

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

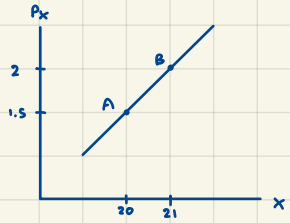
$\} E_1 = (21, 3)$

(c) The consumption x higher when P_x increase



Income effect > Subsitution effect

(d)



Giffen goods

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