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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.

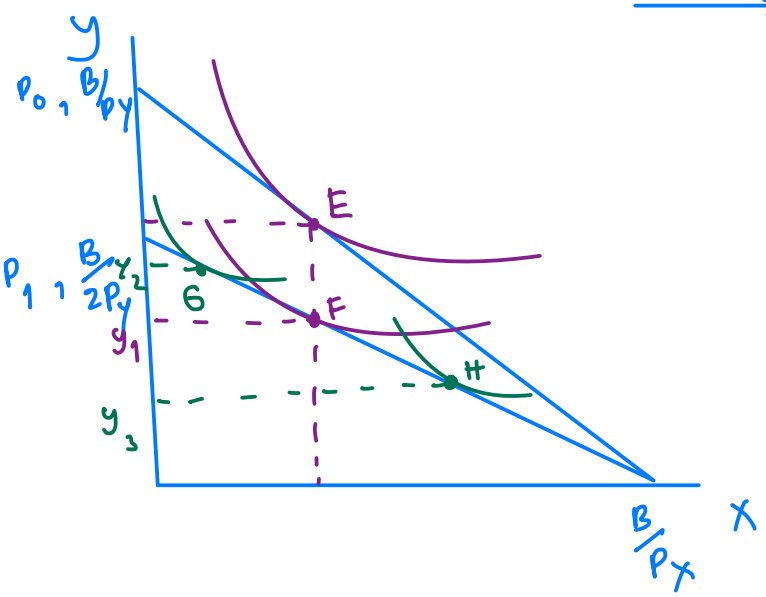
   b. Suppose the price of a Cup O' Soup now rises to $2. Using your diagram from part (a), show the consequences of this change in price. Assume that our student now spends only 30 percent of her income on dining-hall meals. Label the new optimum as point B.

   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.



$$\longrightarrow |h_y| = \frac{\%\Delta y}{\%\Delta P_y} = 1 \quad (E \to F)$$

$$\%\Delta P_y = \frac{\Delta P_y}{3/2\,P_y} = \frac{P_y}{3/2\,P_y} = \frac{2}{3}$$

$$\%\Delta y = \frac{-y_0/2}{3/4\,y_0} = \frac{-2}{3}$$

$$\therefore |h_y| = \frac{\frac{-2}{3}}{\frac{2}{3}} = |-1| = 1$$

$$\longrightarrow |h_y| = \frac{\% \Delta y}{\% \Delta P_y} > 1 \quad (E \to H)$$

$$\longrightarrow |h_y| = \frac{\% \Delta y}{\% \Delta P_y} < 1 \quad (E \to G)$$

Let

$P_0 = P_y$

$P_1 = 2P_y$

$\Delta P_y = P_1 - P_0 = 2P_y - P_y = P_y$

$\frac{P + P_0}{2} = \frac{3P_y}{2} = \frac{3}{2} P_y$

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

$\Delta y = y_1 - y_0 = \frac{y_0}{2} - y_0 = \frac{-y_0}{2}$

$\frac{y_1 + y_0}{2} = \frac{\frac{y_0}{2} + y_0}{2} = \frac{3}{4} y_0$

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?

$1.5y = -6x + 60$

$y = -4x + 40$

if $x = 0 \rightarrow y = 0 + 40$

$y = 40$

if $y = 0 \rightarrow 0 = -4x + 40$

$4x = 40$

$x = 10$

a)

spend equal

$6x = \frac{60}{2}$

$6x = 30$

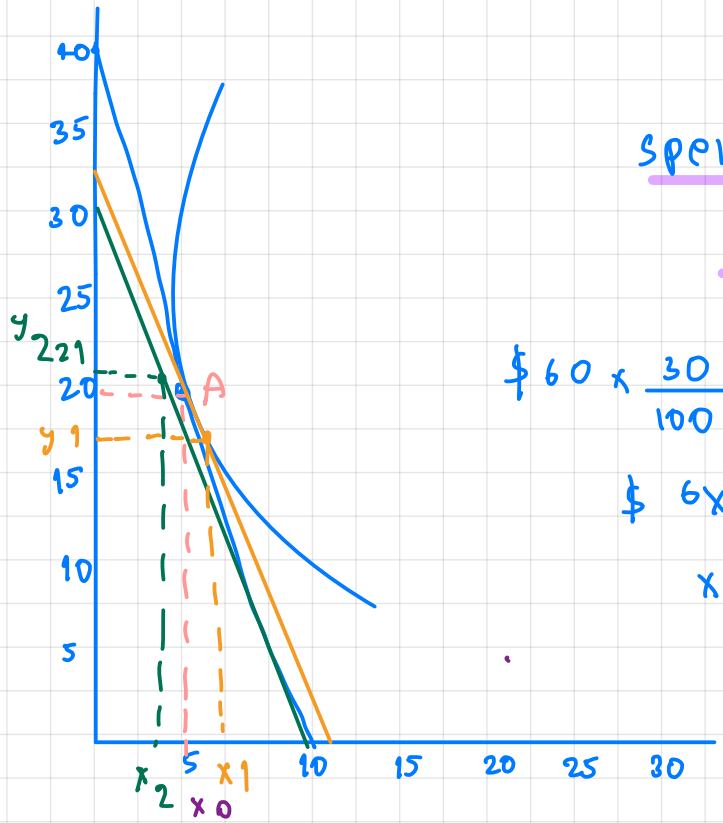
$x = 5$

$1.5y = \frac{60}{2}$

$1.5y = 30$

$y = 20$

b.)



spending 30% on X

and 70% on y

$\$60 \times \frac{30}{100} = \$18$ and $\$60 \times \frac{70}{100} = 42$

$\$6x = \$18$

$x = 3$ unit

$\$2y = \$42$

$y = 21$ unit

c. The result of price change, consumption of Cups O increase by 1. The result of substitution effect.

Increase in P_y make x seems less expensive.

S.E. : $\begin{cases} \Delta x = x_1 - x_0 = \square > 0 \\ \Delta y = y_1 - y_0 = \square > 0 \end{cases}$ → make x and less y → as always"

the result of income effect

I.E. $\begin{cases} \Delta x = x_2 - x_1 = \square < 0 \\ \Delta y = y_2 - y_1 = \square > 0 \end{cases}$ → consume less x and more y

$TE = \begin{cases} \Delta x = \square < 0 \\ \Delta y = \square > 0 \end{cases}$ → consume less x and more y when real income decrease

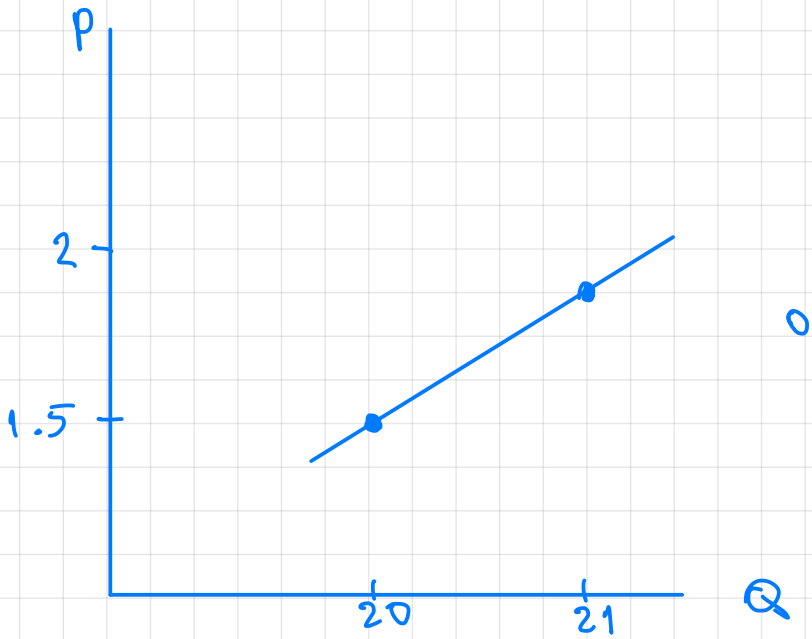
d)

Demand of cups O

(Q, P)

old (20, 1.5)

new (21, 2)



The demand curve of cups O have positive slope so it must be giffen good.

#3

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If consumers do not by less of a commuaity when their income rises, the goods are normal goocds.
Substitution and income would decrease the consumption when the price of normal good increase.
So increase in price lead to bcy less of good.