#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

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#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.

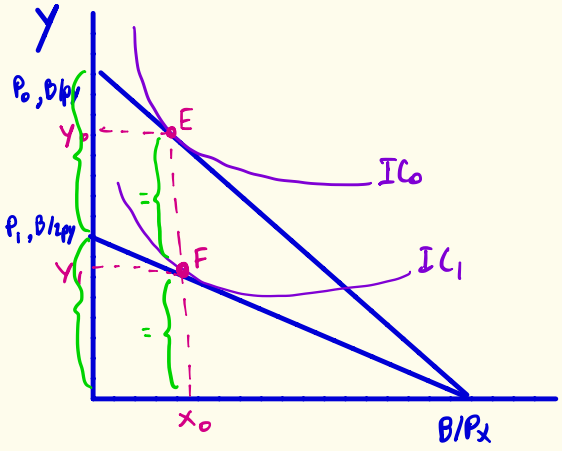
   c. What happened to the quantity of Cups O' Soup consumed as a result of this price change? What does this result say about the income and substitution effects? Explain.

   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



Noted: $P_0 = P_y$

$P_1 = 2P_y$

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

$\frac{P_1 + P_2}{2} = \frac{3P_y}{2} = \frac{3}{2} P_y$

$Y_1 = \frac{Y_0}{2}$, Y_0

$\Delta y = Y_1 - Y_0 = \frac{Y_0}{2} - Y_0 = \frac{-Y_0}{2}$

$\frac{Y_1 + Y_0}{2} = \frac{\frac{Y_0}{2} + Y_0}{2} = \frac{3}{4} Y_0$

Price elasticity of Y; $|n_y| = \frac{\%.\Delta Y}{\%.\Delta P_y} = 1$

From the noted above:

$\%.\Delta P_y = \frac{\Delta P_y}{\frac{3}{2}P_y} = \frac{2}{3}$

$\%.\Delta Y = \frac{-Y_0/2}{\frac{3}{4}Y_0} = \frac{-2}{3}$

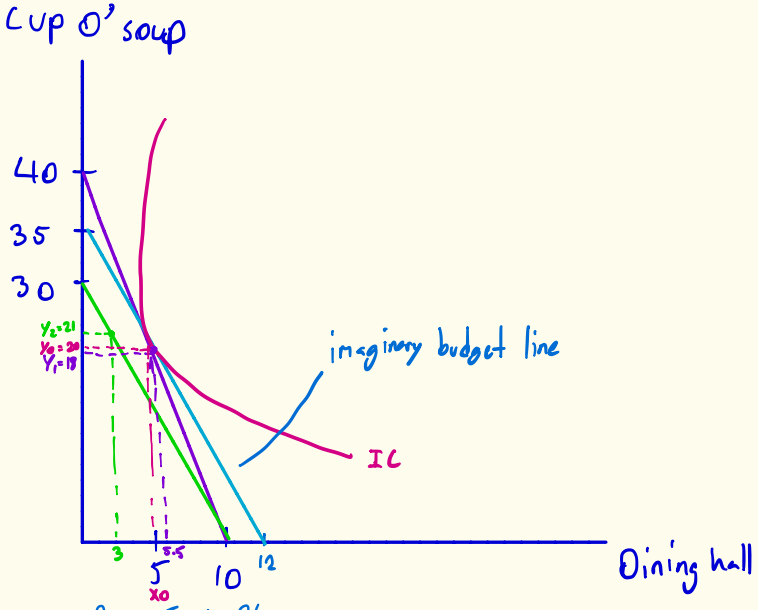
$\therefore n_y = \frac{-2/3}{2/3} = -1$

From E to F: $|n_y| = |-1| = 1$

From E to H: $|n_y| = \frac{\%.\Delta Y}{\%.\Delta P_y} < 1$

From E to G: $|n_y| = \frac{\%.\Delta Y}{\%.\Delta P_y} > 1$

② a)



From the question: $P_y = 1.5 \rightarrow P'_y = 2$

b) $0.3(60) = 80$

$6x = 18$ $\quad 2y = 42$

$x = 3$ $\quad y = 21$

$6x + 2y = 60$

if $y = 0$: $6x = 60$, $x = 10$

if $x = 0$: $2y = 60$, $y = 30$

c) As a result of ΔP, the consumption of cup O'soup increase ↑

The result of substitution effect:

S.E. $\begin{cases} \Delta x = x_1 - x_0 = 5.5 - 5 = 0.5 > 0 \\ \Delta y = y_1 - y_0 = 18 - 20 = -2 < 0 \end{cases}$

The result of income effect:

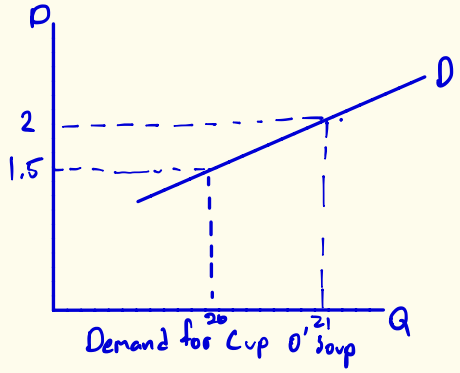
I.E. $\begin{cases} \Delta x = x_2 - x_1 = 3 - 5.5 = -2.5 < 0 \\ \Delta y = y_2 - y_1 = 21 - 18 = 3 > 0 \end{cases}$

Total effect (T.E.) = S.E + I.E

T.E. $\begin{cases} \Delta x = (x_1 - x_0) + (x_2 - x_1) = x_2 - x_0 = 3 - 5 = -2 < 0 \\ \Delta y = (y_1 - y_0) + (y_2 - y_1) = y_2 - y_0 = 21 - 20 = 1 > 0 \end{cases}$

∴ The consumption of x decrease and y increase when real income decreases.

d)



Old → (20, 1.5)
New → (21, 2)
} (Q, P)

∴ The demand curve has positive slope which means Cup O'soup must be giffen good.

(3) In this case, the good can be considered as normal good. As the result of price change, the substitution effect makes the consumer buys less of goods since it looks more expensive. On the other hand, the rise in price makes the consumer has less power to buy. Accordingly, both SE and IE for price rises affect the consumer to buy less.