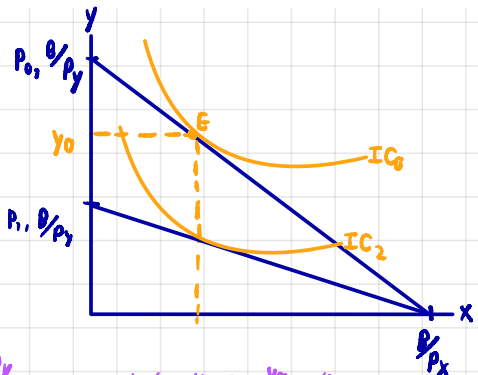
Sapan P. 1365

#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



Let $P_0 = P_y$
$P_1 = 2P_y$
$\Delta P_y = P_1 - P_0$
$= 2P_y - P_y = P_y$
$\frac{P_1+P_0}{2} = \frac{3P_y}{2} = \frac{3}{2}P_y$

Let $y_1 = \frac{y_0}{2}$, y_0
$\Delta y = y_1 - y_0 = \frac{y_0}{2} - y_0 = \frac{-y_0}{2}$
$\frac{y_1+y_0}{2} = \frac{\frac{y_0}{2}+y_0}{2} = \frac{3}{4}y_0$

$\rightarrow |n_y| = \frac{-\frac{\Delta y}{y}}{-\frac{\Delta P_y}{P_y}} = 1$ [E → F]

$-\frac{\Delta P_y}{P_y} = \frac{\Delta P_y}{\frac{3}{2}P_y} = \frac{P_y}{\frac{3}{2}P_y} = \frac{2}{3}$

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

$|n_y| = \frac{-\frac{2}{3}}{\frac{2}{3}} = |-1| = 1$

$|n_y| = \frac{-\frac{\Delta y}{y}}{-\frac{\Delta P_y}{P_y}} > 1$ [E → H]

$|n_y| = \frac{-\frac{\Delta y}{y}}{-\frac{\Delta P_y}{P_y}} < 1$ [E → G]

#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.

x y

$6x + 1.5y = 60$

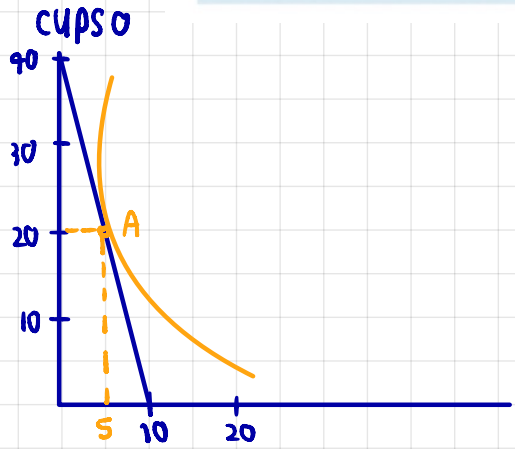
a. Draw the budget constraint showing the trade-off between dining-hall meals and Cups O' Soup. Assuming that she spends equal amounts on both goods, draw an indifference curve showing the optimum choice. Label the optimum as point A.

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?

a)



Dining hall

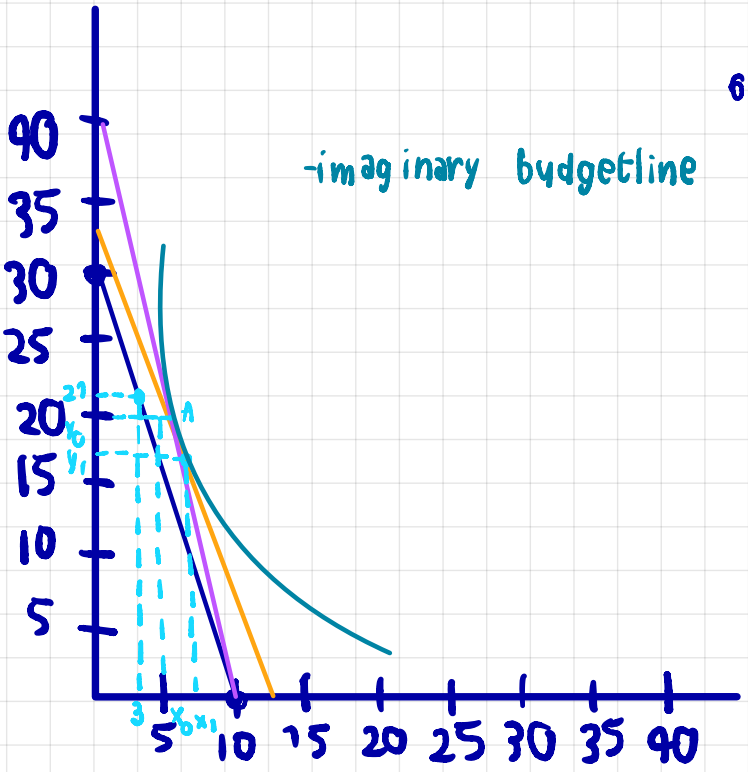
$15y = -6x + 60$
$y = -4x + 40$

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

if $y = 0 \rightarrow 0 = -4x + 40$
$4x = 40$
$x = 10$

spend equal $6x = \frac{60}{2}$ $1.5y = \frac{60}{2}$

$6x = 30$ $1.5y = 30$
$x = 5$ $y = 20$



-imaginary budgetline

$6X + 2y = 60$

$2y = -6X + 60$ if $X = 0 \rightarrow y = 0 + 30$

$y = 30$

$y = -3X + 30$ if $y = 0 \rightarrow 0 = -3x + 30$

$x = 10$

spending 30% on x and 70% on y

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

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

$x = 3$ unit $y = 21$

c) result of price change, consumption of cups0 increased by 1

The result of substitution effect, Increase in P_y → x seems less expensive

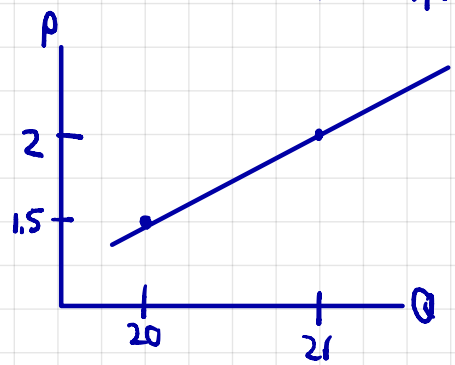
S.E. $\begin{cases} \Delta x = x_1 - x_0 = \square > 0 \\ \Delta y = y_1 - y_0 = \square < 0 \end{cases}$ → more x and less y "as always"

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 & more y when real income decrease

d) demand of cups0



(Q, P)

old (20, 1.5)

new (21, 2)

demand curve of cups0 have positive slope

it would be giffen good.

#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.

If consumer not buy commodity less when they have income rises, goods are normal goods

income & substitution will decrease the consumption when price of normal good increase

Therefore price lead to buy less of good