#1 If the price Px and Py increase 10% at the same time, with income Remaining unchanged, show that this is equivalent to a reduction in income.

#2 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

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.

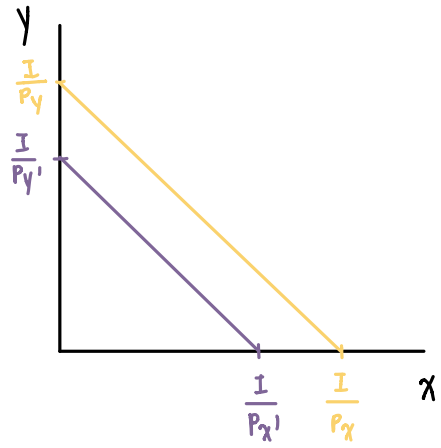
   a. Draw the budget constraint showing the trade-off between dining-hall meals and Cups O' Soup. Assuming that she spends equal amounts on both goods, draw an indifference curve showing the optimum choice. Label the optimum as point A.

   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?

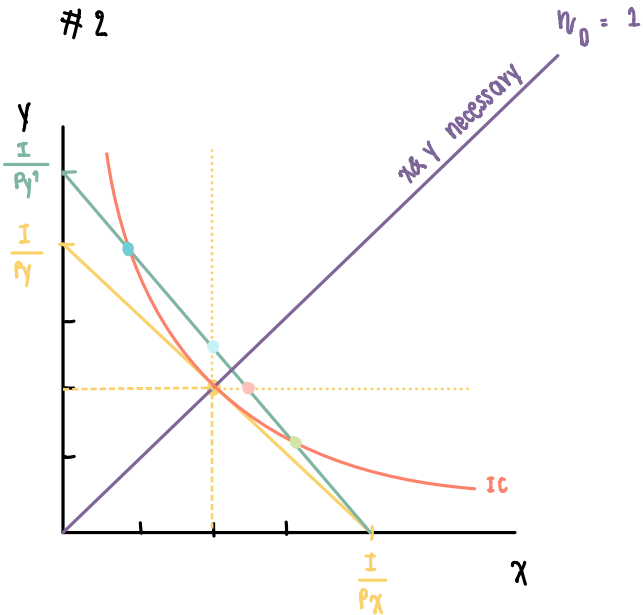
1



The decreasing of Income will affect both P_x and P_y, it will decrease both price ; either more or less depend on the Income decreasing rate.

While the increasing of P_x is only going to drag down P_x price, same as P_y that is able to affect only P_y. However, it's special in this case due to 10%. rate of increasing both P_x and P_y on the same time which giving the same result as decreasing of income (for 10%.) without neither income reducing nor increasing.

2

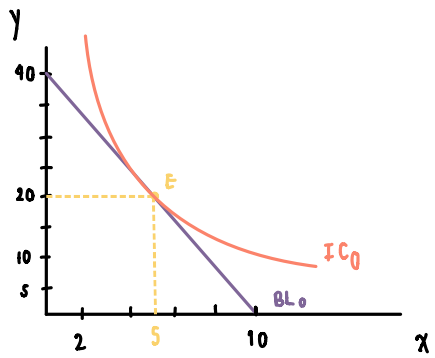


7

(a) Let x = eating at the dining hall for $ 6 per meal.

y = eating a cup o' soup for $ 1.50 per meal.

Budget = $ 60 per week



$BL \rightarrow P_x x + P_y y = I$

$6x + 1.5y = 60$

$x = 0, \quad y = 40$

$x = 10, \quad y = 0$

Slope $\rightarrow -\frac{P_x}{P_y}$

$= -\frac{6}{1.5}$

$= -4$

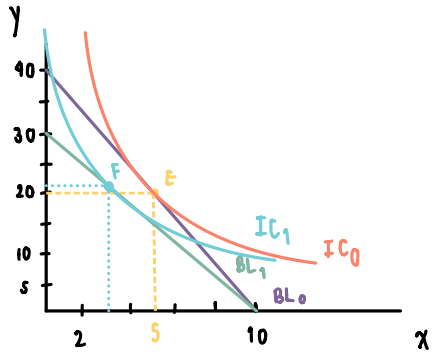
$\therefore$ The slope showed that if she wants 1 meal in the dining hall, she has to trade off 4 meals of cup o' soup.

At E equilibrium, she spends amount of money on both types of meal

$6x = 30$ | $1.5y = 30$

$x = 5$ | $y = 20$

(b.) The price of cup o' soup rise up to $ 2



$BL \rightarrow 6x + 1.5y = 60$

$BL_1 \rightarrow 6x + 2y = 60$ Slope $\rightarrow -3$

$\therefore x = 0, \quad y = 30$

$x = 10, \quad y = 0$

The student spends only 30% on dining hall meals

$\frac{30}{100}(60) = \$18$ | pay the left on cup o' Soup $\rightarrow$ $ 42

sub BL_1

$18 + 2y = 60$ | $6x = 18$

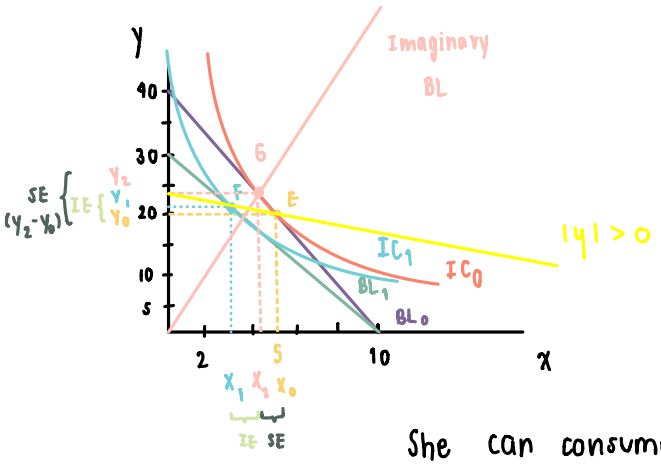
$y = \$21$ | $x = 3$

$2y = 42$

$y = 21$

The optimum at point F is located at (3, 21)

(C)



\# From E to F

Total Effect $\Delta X = X_1 - X_0$

$\Delta y = Y_1 - Y_0$

Slope of budget line

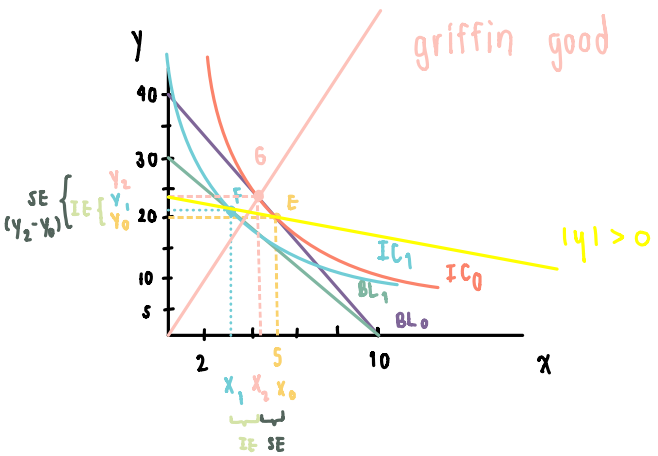
$IC_0 \rightarrow \frac{P_X}{P_y} = 4 \qquad \frac{P_X'}{P_Y} : \frac{30}{10} = 3$

She can consume less because the price cup c' soup has been increase

→ from E to G : substitution effect

- has the same slope as 3
- tangent to original IC_0

(D)



The decreasing of price x affect consumers' behaviour, the consumer end up buying less x due to the griffin good situation.