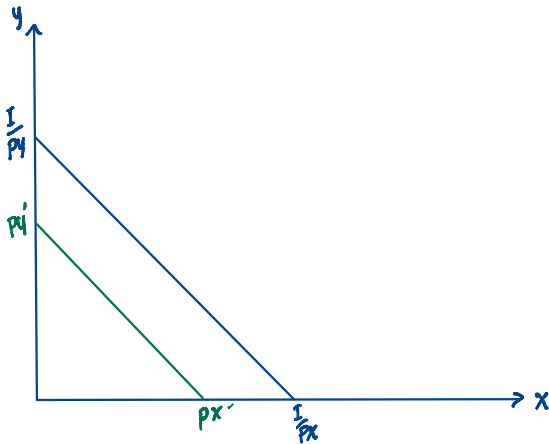


#1 If the price P_x and P_y increase 10% at the same time, with income remaining unchanged, show that this is equivalent to a reduction in income.

#2 Demonstrate how PCC with varying price P_y , (P_x 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?

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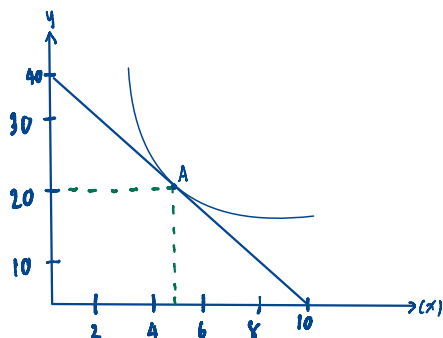


From the graph, we can conclude that when price change with the same time and rate it can leads to inflation.

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a) Let x = eat at dining hall $\rightarrow$ 6\$/meal
 y = eat a cup o'soup $\rightarrow$ 1.5\$/meal
 she has 60\$



$$Bl_0 = P_x x + P_y y = 60$$

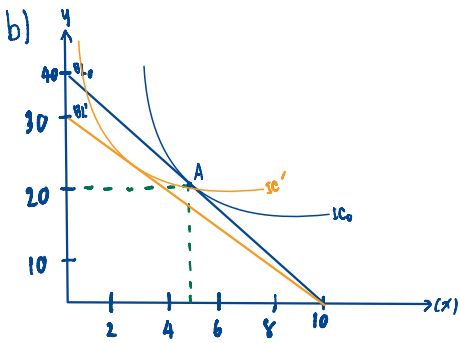
$$6x + 1.5y = 60$$

$$\begin{array}{l|l} x=0 & y=40 \\ y=0 & x=10 \end{array}$$

$$\text{slope} = -\frac{P_x}{P_y} = -\frac{40}{10} = -4$$

$\therefore$ if she would like to eat 1 meal at dining hall

She has to trade off with 4 meals of a cup o'soup.



if the price of o'soup increase by 2 \$

$$6x + 1y = 60$$

$$x=0 \quad y=0$$

$$y=30 \quad x=20$$

if she want to spend only 30 \$ of her budget on dining hall meals

$$\frac{30}{10} \cdot 16 = 18 = p_x$$

$$1x + 1y = 60$$

$$1y = 42$$

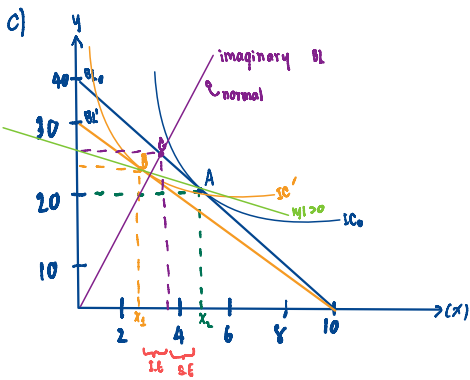
$$y = 21 \text{ $}$$

So, she can spend only 42 \$ on o'soup

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

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

At $x=3$ and $y=21$ is the optimum at point B.



From A to B

total effect $\Delta x = x_1 - x_0$

$\Delta y = y_1 - y_0$

slope of Budget line changes from

$IC_0; \frac{p_x}{p_y} = 4 \rightarrow \frac{p_x'}{p_y} = \frac{30}{10} = 3$

- G can be determined by drawing

an "imaginary budget"

that has the same slope as the

new budget line $\frac{p_x'}{p_y} = 3$

to be tangent to the original IC_0 at C

Substitution Effect for $x = x_0 - x_2$

$= y_2 - y_0$

Income Effect - From C to B

↳ let change in $x = x_2 - x_1$

change in $y = y_2 - y_1$

d) As the purple line, when the price of x decreases, the consumers will buying less x . This is giffen good.