#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.

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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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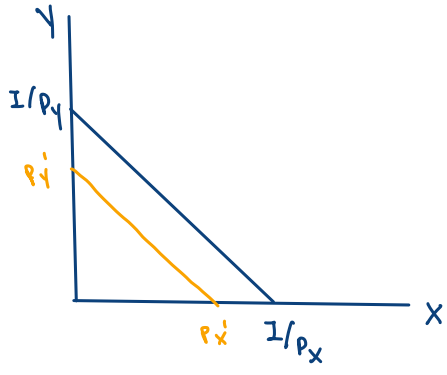

As the graph above, if the price change at the same time and at the same rate that leads to inflation.

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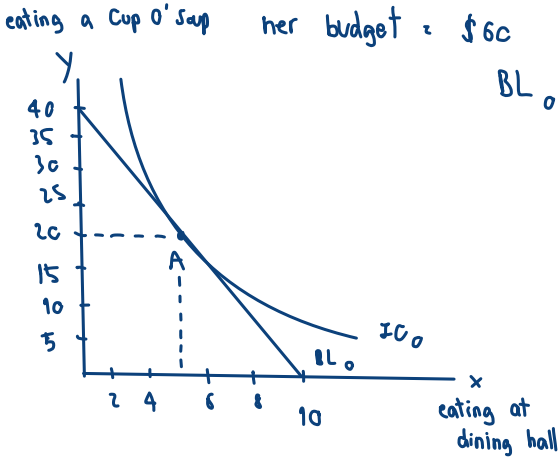
(a). Let x = eating at the dining hall → $6/meal

y = eating a cup o' soup → $1.5/meal

her budget = $60



$BL_0 = px + py = 60$

$6x + 1.5y = 60$

$x = 0, \ y = 40$

$x = 10, \ y = 0$

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

∴ if she want to eat 1 meal at dining hall, she have to trade off 4 meal of eating a cup o' soup.

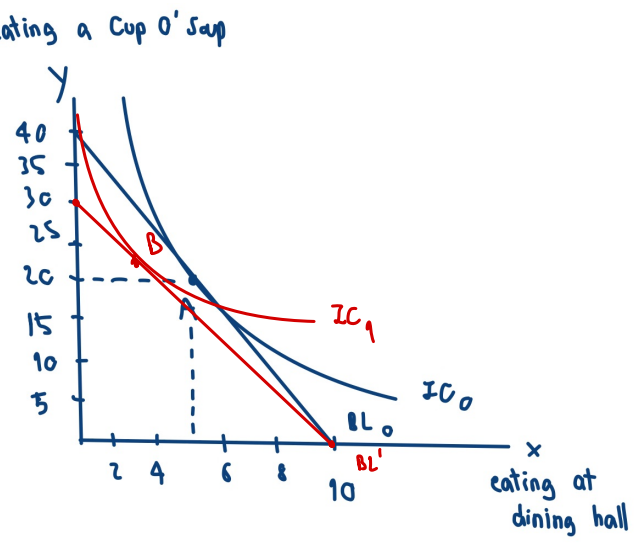
And she spends equal amounts on both goods

∴ $6x = 30 \rightarrow x = 5$

$1.5y = 30 \rightarrow y = 20$

and at point A is when she spends equal on both goods.

(b.)



As the question mention above, the price of Cup o'soup rises to $2 (from 1,5) $\quad 6x + 2y = 60$

$x = 0, y = 30$

$x = 10, y = 0$

And now the student spends only 30% of her budget on dining hall meals

$$\frac{30}{100}(60) = \$18 = P_x$$

$$18 + 2y = 60$$

$$2y = 42$$

$$y = \$21$$

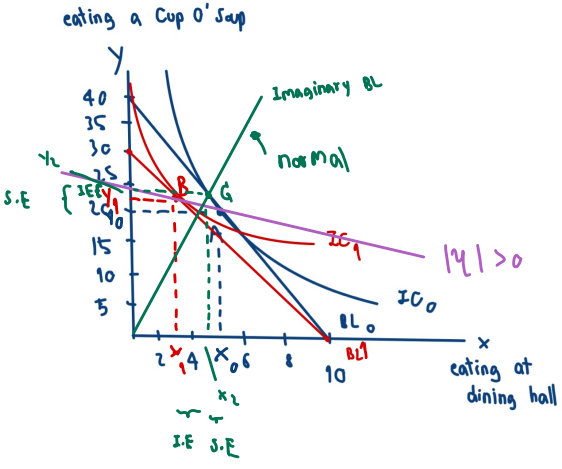
And she also can spend only $42 on Cup O'Soup.

$$6x = 18 \rightarrow x = 3$$

$$2y = 42 \rightarrow y = 21$$

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



From A to B

Total Effect $\Delta x = x_1 - x_0$

$\Delta y = y_1 - y_0$

slope of budget line change from

IC_0; $\frac{P_x}{P_y} = 4 \rightarrow \frac{P_x'}{P_y} = \frac{30}{10} = 3$

she can consume less because the price of cup o'soup has increases.

From A to G → substitution Effect

- G can be determined by drawing an "imaginary budget line" 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 G.

Substitution Effect for x : $x_0 - x_2$

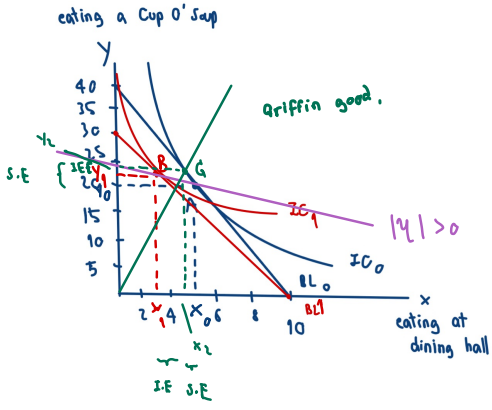
for y : $y_2 - y_0$

Income Effect - From G to B

↳ the change in x : $x_2 - x_1$

change in y : $y_2 - y_1$

d. Use points A and B to draw a demand curve for Cup O' Soup. What is this type of good called?



As the green line, when the price of x reduces, the consumer can end up with buying less of x. This is griffin good.