#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.

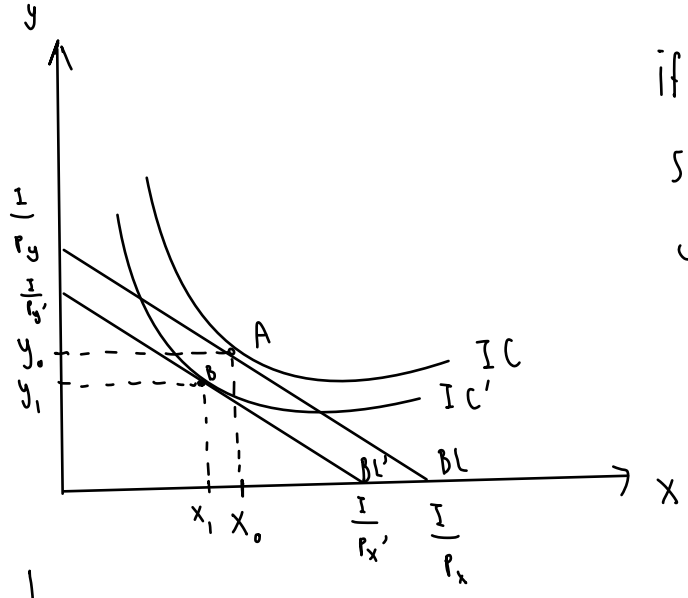
   a. Draw the budget constraint showing the trade-off between dining-hall meals and Cups O' Soup. Assuming that she spends equal amounts on both goods, draw an indifference curve showing the optimum choice. Label the optimum as point A.

   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 graph shown that it equivalent to a reduction in income.

if P_x + P_y increase 10% at the same time, with income remaining unchanged.

Assumption:

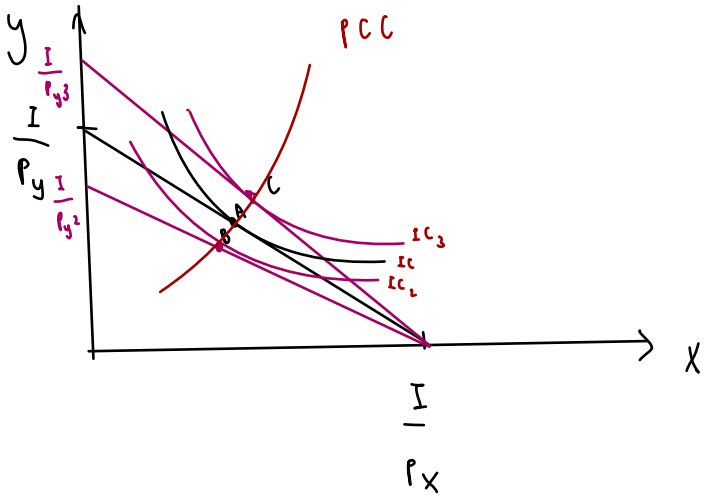
$P_x = 10 \rightarrow 10.1$

$P_y = 20 \rightarrow 20.2$

Slope of IC $= -\frac{10}{20} = -0.5$

Slope of IC $= -\frac{10.1}{20.2} = -0.5$

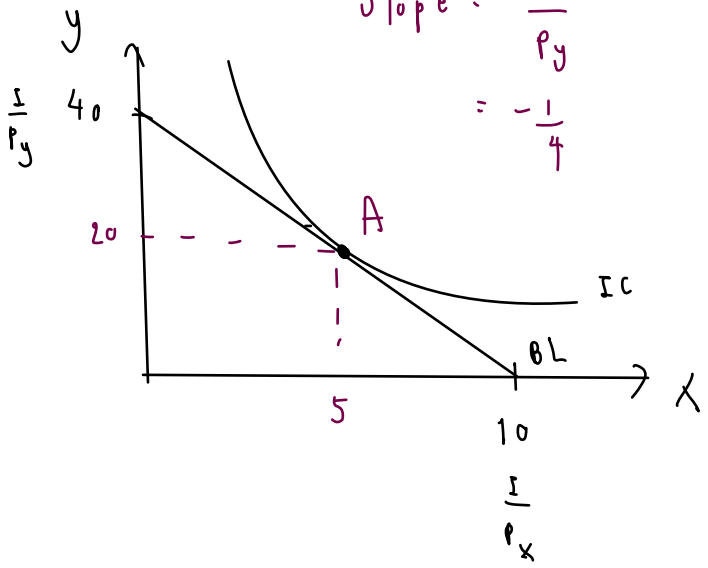
2. PPC with varying price P_y



$|n_y| = 1$

$|n_y| < 1$

4 a.)



$\text{Slope} = -\frac{P_x}{P_y}$

$= -\frac{1}{4}$

x = eating at the dining hall

y = eating a cup o' soup

$60

$BL = P_x \cdot X + P_y \cdot y = 60$

$6x + 1.5y = 60$

if $x = 0$; $y = 40$

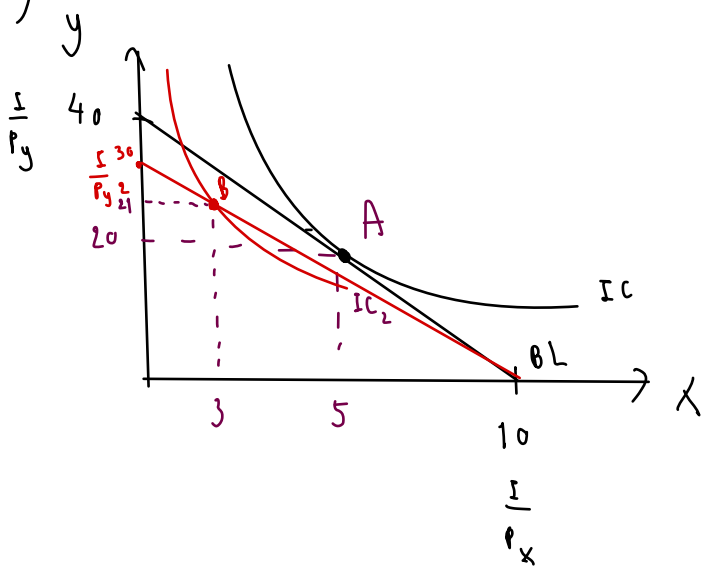
if $y = 0$; $x = 10$

∴ if she spends equal amounts on both goods

$\frac{60}{2} = 30$; $6X = 30$ | $1.5y = 30$

$\boxed{X = 5}$ | $\boxed{y = 20}$

b.)



the price of cup o' soup rises to $ 2.

$6X + 1.5y = 60$

↳ $6X + 2y = 60$

When $X = 0$; $y = 30$

When $y = 0$; $X = 10$

And when the student spends only 30% on dining hall meals

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

So; $P_X = \$18 \rightarrow P_y = \$42$

$6x = 18$

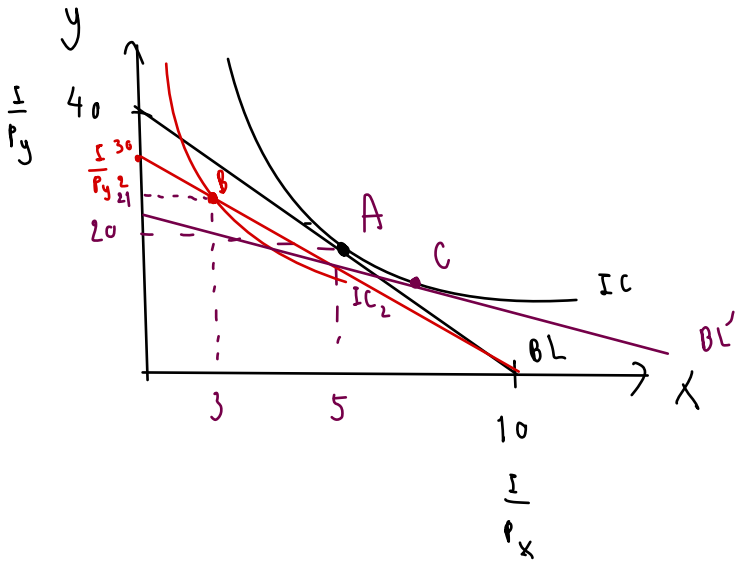
$\boxed{X = 3}$

$2y = 42$

$\boxed{y = 21}$

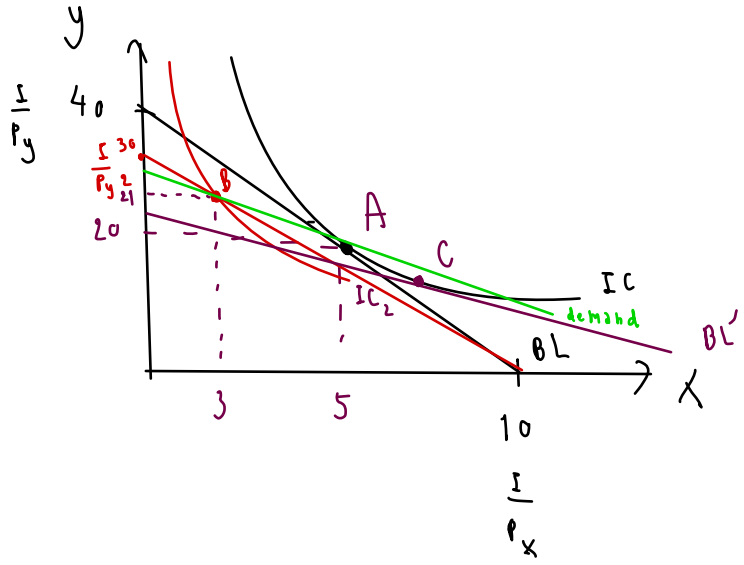
point B = (3, 21)

c.)



The income change to BL' and she can consume less cup o'soup but more hah meal.
C is the substitution effect.

d.)



It is homal good.