

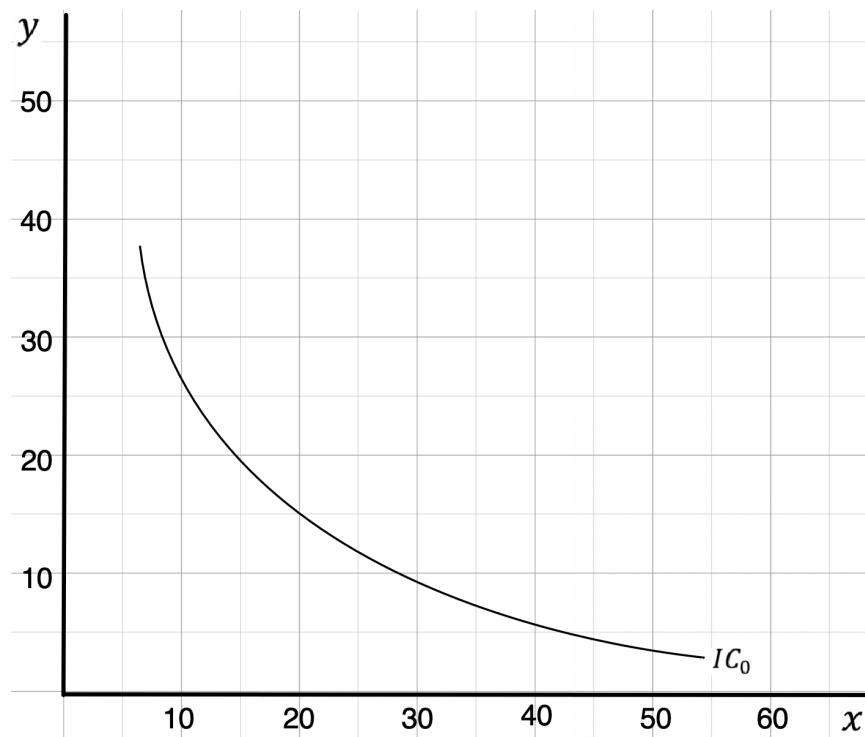
#1

12. Five consumers have the following marginal utility of apples and pears:

	Marginal Utility of Apples	Marginal Utility of Pears
Claire	6	12
Phil	6	6
Haley	6	3
Alex	3	6
Luke	3	12

The price of an apple is \$1, and the price of a pear is \$2. Which, if any, of these consumers are optimizing their choices of fruit? For those who are not, how should they change their spending?

#2 Given the price of $x = 3$, price of $y = 4$, and budget = 120.



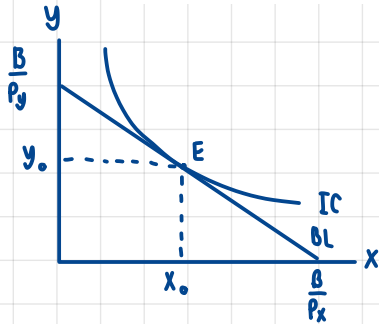
- Draw the budget line and find the equilibrium with the given indifference curve IC in the diagram below.
- If the income increases from 120 to 150, where will be the new equilibrium so that the change in the consumption of x be such that the Income Elasticity of x is equal to 1.
- With the change of equilibrium you found in (B), what will be the Income Elasticity of y ?

#1

12. Five consumers have the following marginal utility of apples and pears:

	MU_x Marginal Utility of Apples	MU_y Marginal Utility of Pears	$\frac{MU_x}{MU_y}$
Claire	6	12	$\frac{1}{2}$
Phil	6	6	1
Haley	6	3	2
Alex	3	6	$\frac{1}{2}$
Luke	3	12	$\frac{1}{4}$

The price of an apple is \$1, and the price of a pear is \$2. Which, if any, of these consumers are optimizing their choices of fruit? For those who are not, how should they change their spending?



At point equilibrium E, it is observable that
 slope of BL = slope of IC (utilities is maximize)
 slope of BL = $\frac{\Delta y}{\Delta x} = -\frac{P_x}{P_y}$
 slope of IC = $\frac{\Delta y}{\Delta x} = \frac{MU_x}{MU_y}$

So, slope of BL = slope of IC

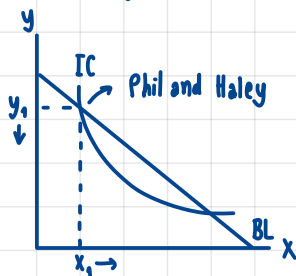
$$-\frac{P_x}{P_y} = -\frac{MU_x}{MU_y}$$

$$\downarrow$$

$$\frac{1}{2}$$

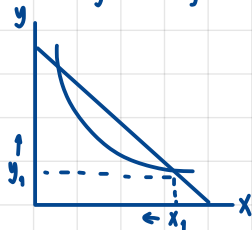
Therefore, Claire and Alex are optimizing their choices, while others are not to optimizing their choices of fruits, each of them are suggest as follows.

• Phil and Haley, $\frac{P_x}{P_y} < \frac{MU_x}{MU_y}$

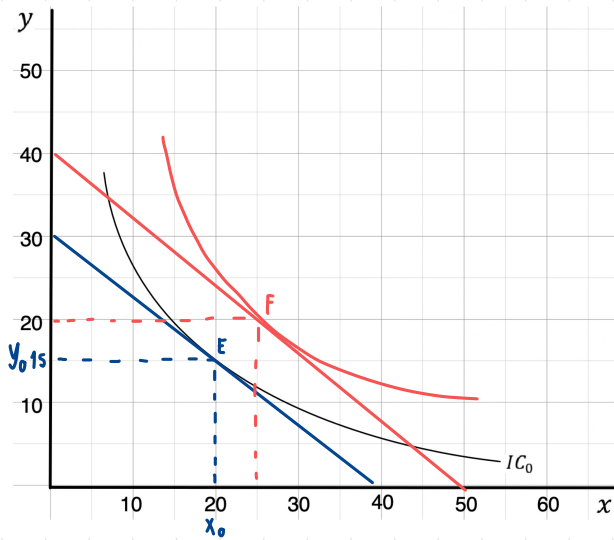


since $\frac{P_x}{P_y} < \frac{MU_x}{MU_y}$, they should increase their consumption of x (apples) and decrease their consumption of y (pears)

• Luke, $\frac{P_x}{P_y} > \frac{MU_x}{MU_y}$



Since, $\frac{P_x}{P_y} > \frac{MU_x}{MU_y}$, they should decrease their consumption of x (apples) and increase their consumption of y (pears)



$$1) 3x + 4y = 120$$

$$\frac{B}{P_y} = \frac{120}{4} = 30$$

$$\frac{B}{P_x} = \frac{120}{3} = 40$$

$$2) 3x + 4y = 150 \quad \eta_x^x = 1$$

$$\frac{B}{P_y} = \frac{150}{4} = 37.5$$

$$\frac{B}{P_x} = \frac{150}{3} = 50$$

New equilibrium point F

$$3) \eta_y^y = \frac{\% \Delta Q_y}{\% \Delta I}$$

$$= \frac{\frac{37.5 - 30}{30}}{\frac{150 - 120}{120}}$$

$$= \frac{0.25}{0.25}$$

$$= 1$$