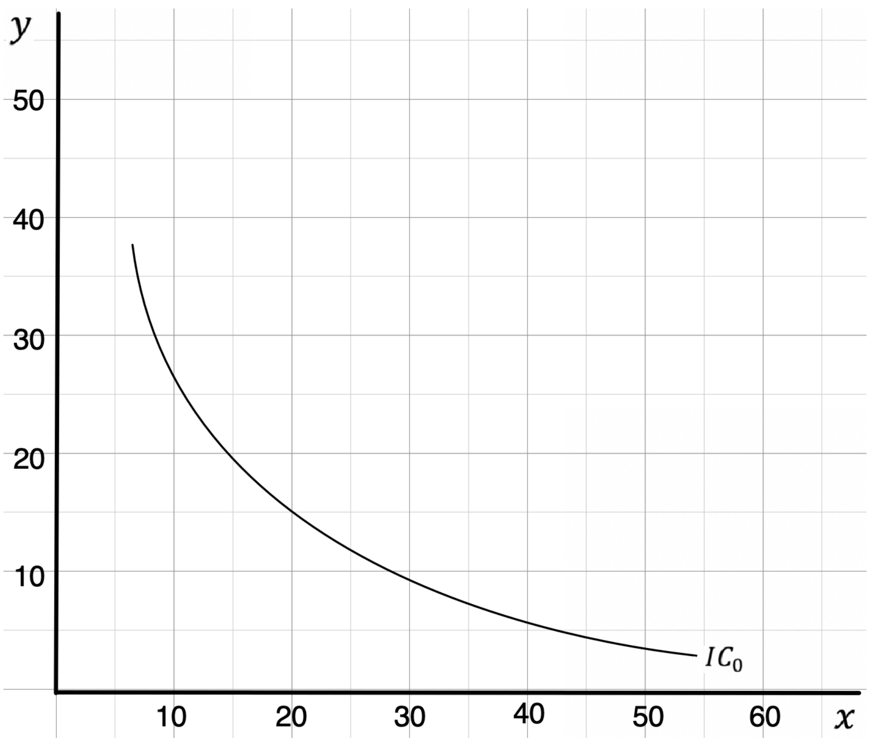
#1

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	1/2
Phil	6	6	1
Haley	6	3	2
Alex	3	6	1/2
Luke	3	12	1/4

The price of an apple (P_x) is \$1, and the price of a pear (P_y) 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?

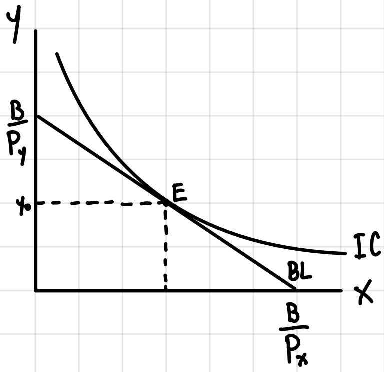
#2 Given the price of x = 3, price of y = 4, and budget = 120.



A) Draw the budget line and find the equilibrium with the given indifference curve IC in the diagram below.
B) 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.
C) With the change of equilibrium you found in (B), what will be the Income Elasticity of y?

Thamonpat Sodsai
6404641224

1)



At equilibrium point (E), it is observable that
slope of BL = slope of IC (max utilities)

$= \frac{\Delta y}{\Delta x} = \frac{-P_x}{P_y}$

slope of IC $= \frac{\Delta y}{\Delta x} = -\frac{MU_x}{MU_y}$

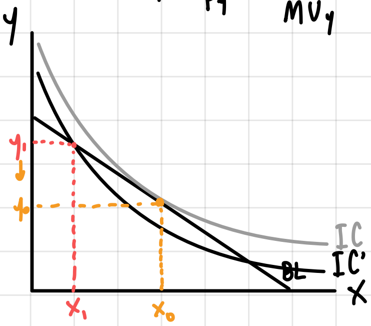
So, slope of BL = slope of IC

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

1/2

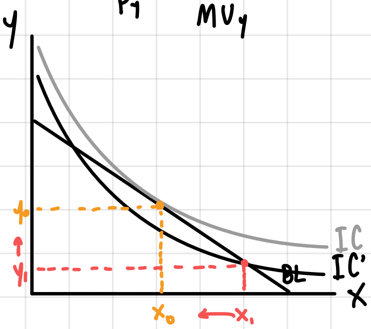
∴ Claire and Alex are optimizing their choices, while others are not.
To optimize their choices of fruits, each of them are suggest as follows

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



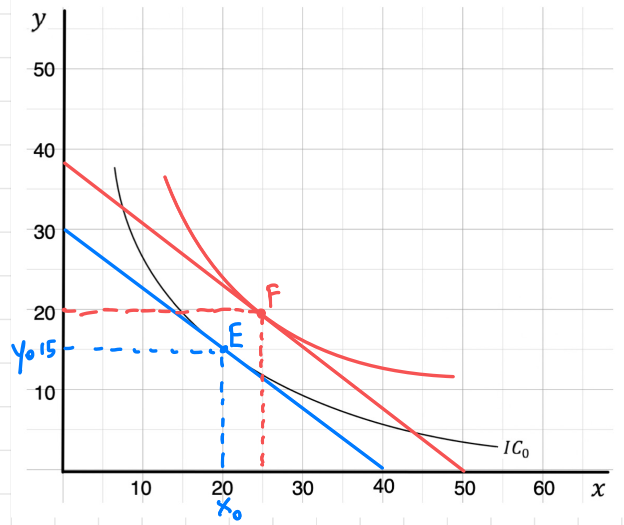
Since $\frac{P_x}{P_y} < \frac{MU_x}{MU_y}$, they should increase their consumption of x (apples) and decrease their consumption of y (pears)

- 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)

2.)



1. $3x + 4y = 120$

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

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

2. $3x + 4y = 150$ $\quad \eta_I^x = 1$

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

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

New equilibrium point F

3. $\eta_I^y = \frac{\%\Delta Q_y}{\%\Delta I}$

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

$= \frac{0.25}{0.25} = 1$