#1

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

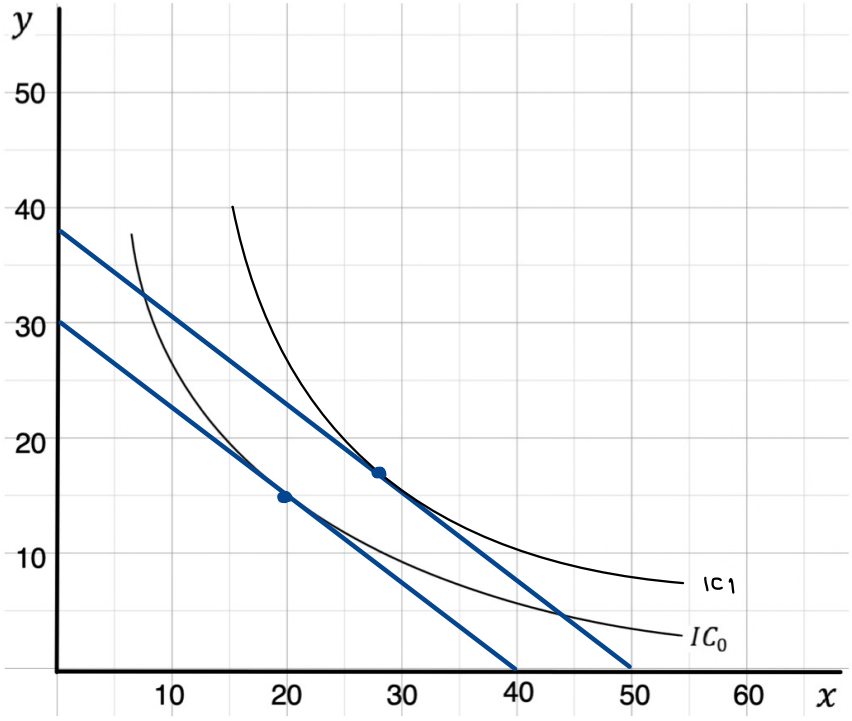
best optimization

	Marginal Utility of Apples	Marginal Utility of Pears	$\frac{MU}{P}$ (apples)	$\frac{MU}{P}$ (pears)
Claire	6	12	$\frac{6}{1}$	$\frac{6}{2}$
Phil	6	6	6	3
Haley	6	3	6	1.5
Alex	3	6	3	3
Luke	3	12	3	6

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?

1) To conclude from the graph Phil should spend more on apples, while Haley also need to spend more on apples. Alex can spend on either apples or pears. Luke should all of his budget on pears.

#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.

$3x+4y = 120$

at $x=0$, $y = \frac{120}{4} = 30$

at $y=0$, $x = \frac{120}{3} = 40$

Slope $= -\frac{30}{40} = -0.75$

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.

$3x + 4y = 150$

$x = 0, \quad y = \frac{150}{4} = 37.5$

$y = 0, \quad x = \frac{150}{3} = 50$

$n_I = 1$

$1 = \frac{\%\Delta x}{(150-120)/120}$

$1 = \frac{\%\Delta x}{0.25}$

$0.25 = \Delta x$

x increased 25%

$20 \times 1.25 = 25 \qquad x = 25$

$3(25) + 4y = 150$

$75 + 4y = 150$

$4y = 75$

$y = 18.75$

New equilibrium $(25, 18.75)$

C) With the change of equilibrium you found in (B), what will be the Income Elasticity of y?

New equilibrium $(25, 18.75)$

$$n_I = \frac{\%\Delta y}{\%\Delta I} = \frac{\frac{18.75 - 15}{15}}{\frac{150 - 120}{120}}$$

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

Income elasticity is equal to 1.