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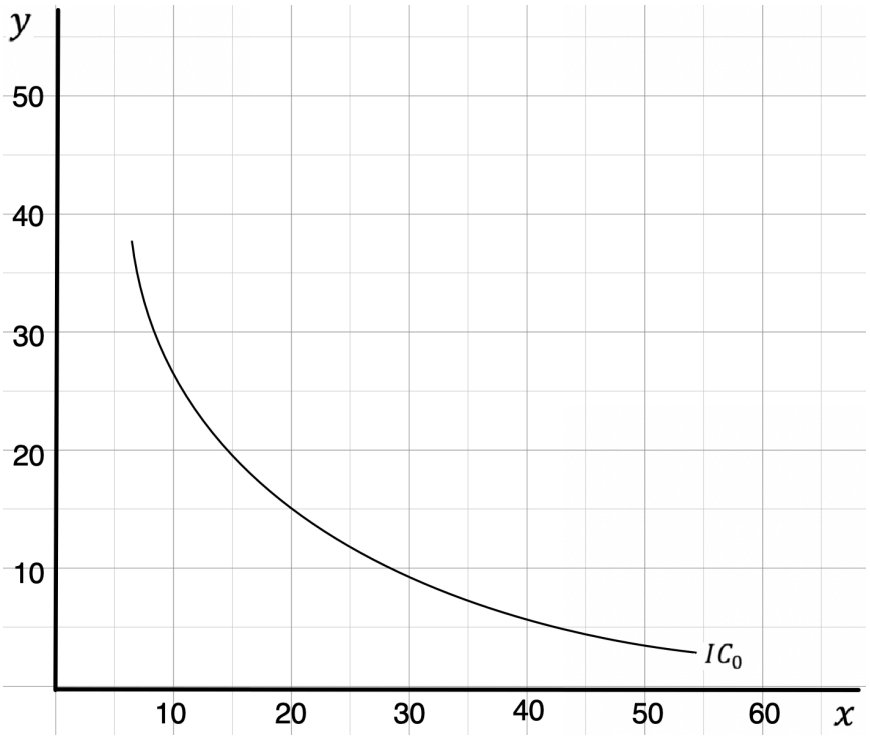
#1

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.



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?

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	Mu per dollar of Apples	Mu per dollar of pears
Claire	6/1 = 6	12/2 = 6
Phil	6/1 = 6	6/2 = 3
Haley	6/1 = 6	3/2 = 1.5
Alex	3/1 = 3	6/2 = 3
Luke	3/1 = 3	12/2 = 6

Claire has best optimizes her choices

Phil and Haley should spend all budget for apples because they will get more utility.

Alex has equal utility on both, so he can spend on whatever that he want.

Luke should spend all budget for pears because he will get more utility.

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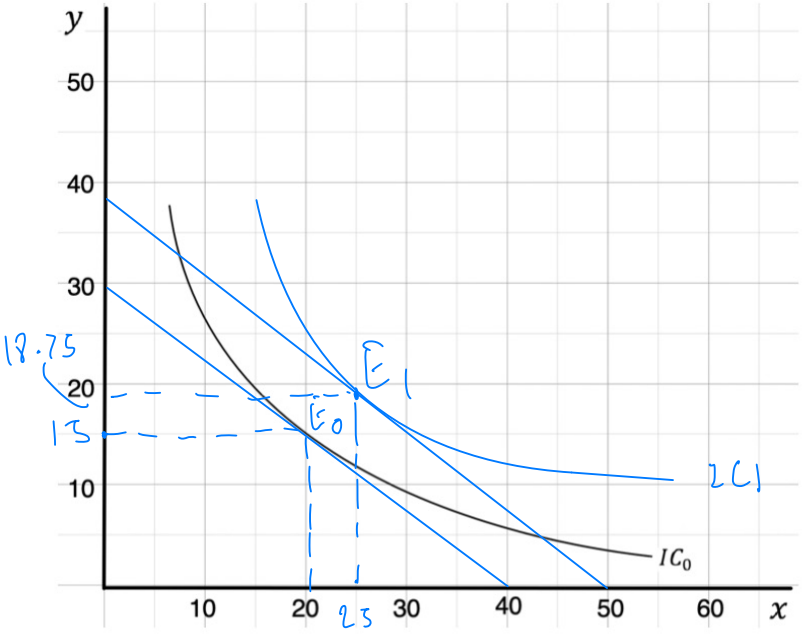

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A) $3X + 4Y = 120$

$3(0) + 4y = 120$

$y = 30$

$3X + 4(0) = 120$

$X = 40$

b) $3X + 4Y = 150$

$3(0) + 4Y = 150$

$Y = 37.5$

$3X + 4(0) = 150$

$X = 50$

$$n_I^X = \frac{\%\Delta X}{\%\Delta I} \cdot \frac{\%\Delta X}{\frac{150 - 120}{120} \times 100} = 1$$

$$= \frac{\%\Delta X}{25} \cdot 1$$

$\%\Delta X = 25\%$ (25% = 20 + 5 = 25)

$\therefore$ X increase 25% $= 20 + 5 = 25$

Equilibrium $(25, 18.75)$

$3(25) + 4Y = 150$

$Y = 18.75$

c) Equilibrium (25, 18.75)

$$n_I^Y = \frac{\%\Delta Y}{\%\Delta I} = \frac{\frac{18.75 - 15}{15} \times 100}{25}$$

$$= \frac{25}{25}$$

$$= 1$$

∴ income Elasticity of y equal to 1