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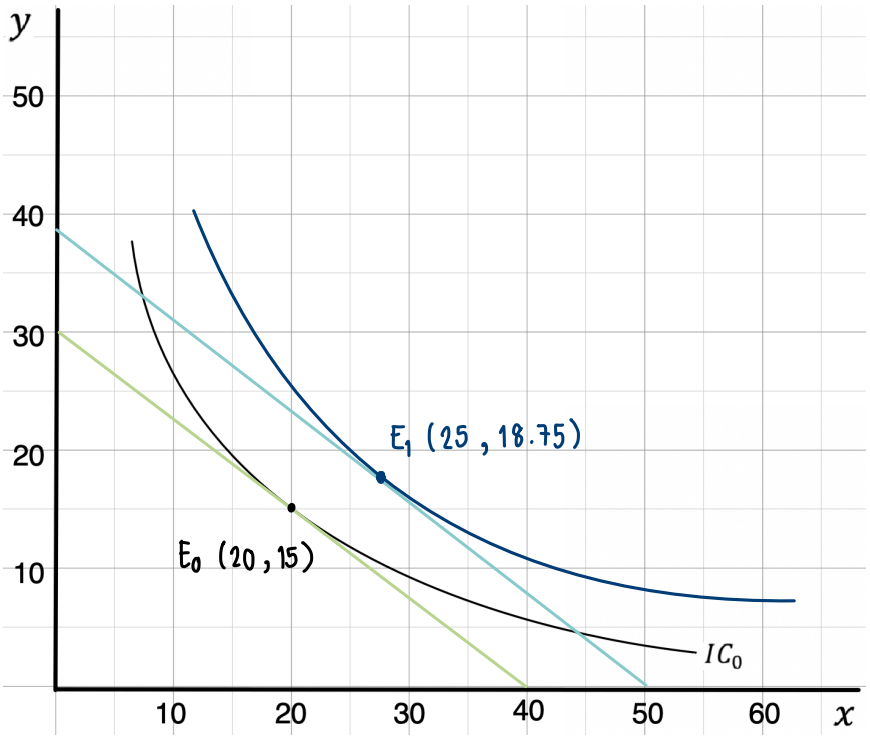
#1

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

	Marginal Utility of Apples		Marginal Utility of Pears	
Claire	6	6	12	24
Phil	6	6	6	12
Haley	6	6	3	6
Alex	3	3	6	12
Luke	3	3	12	24

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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1 Claire has the best marginal Utility when compared to the rest 4 consumers.

- Phil should change to spend all on apples instead.
- Haley Should change to spend all on apples too.
- Alex can spend all for both Pear and apples because the result is remain the same on any choice he made
- Luke should change to spend all for Pear instead.

2

A. Budget line : $P_X X + P_Y Y = B$

$3X + 4Y = 120$

$X = 0$, $4Y = 120$	$Y = 0$, $3X = 120$
$Y = 30$	$X = 40$

$\therefore$ So the equilibrium is at point $B\ (X_0, Y_0) = (20, 15)$

B. Income increase from 120 - 150

New Budget line : $3X + 4Y = 150$

$X = 0$, $4Y = 150$	$Y = 0$, $3X = 150$
$Y = 37.5$	$X = 50$

$$\eta_I = \frac{\% \Delta Q_X}{\% \Delta I} = \frac{\frac{X_1 - 20}{20}}{\frac{150 - 120}{120}}$$

$$1 = \frac{X_1 - 20}{5}$$

$$5 = X_1 - 20$$

$$X_1 = 25$$

C. Income Elasticity of Y :

$$\eta_I = \frac{\% \Delta Q_Y}{\% \Delta I} = \frac{\frac{18.75 - 15}{15}}{\frac{150 - 120}{120}} = \frac{0.25}{0.25} = 1$$