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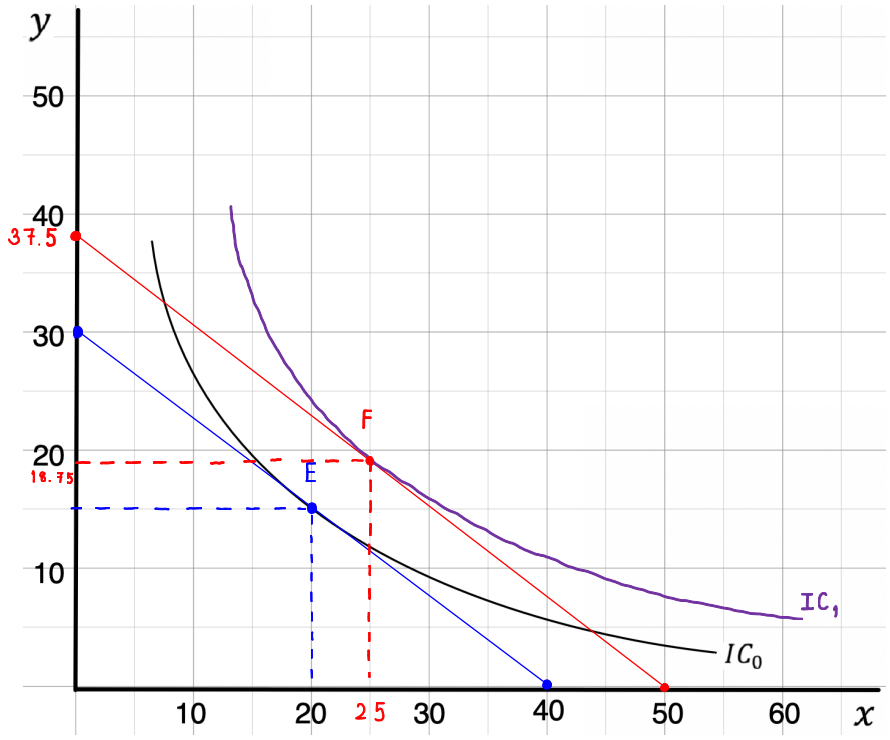
#1

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.



$3x + 4y = 120$

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

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

slope $= -\frac{30}{40} = -\frac{3}{4}$

$3x + 4y = 150$

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

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

slope $= -\frac{37.5}{50} = -\frac{3}{4}$

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?

1.

	Marginal Utility per dollar of Apples	Marginal Utility per dollar of Pear	
Claire	$6/1 = 6$	$12/2 = 6$	$\Rightarrow 6+6=12$
Phil	$6/1 = 6$	$6/2 = 3$	$\Rightarrow 6+3=9$
Haley	$6/1 = 6$	$3/2 = 1.5$	$\Rightarrow 6+1.5=7.5$
Alex	$3/1 = 3$	$6/2 = 3$	$\Rightarrow 3+3=6$
Luke	$3/1 = 3$	$12/2 = 6$	$\Rightarrow 3+6=9$

$\therefore$ Claire is optimizing their choice of fruits.

Others should adjust their spending,

- Phil should spend all his money on apples.
- Haley should spend all her money on apples.
- Alex can spend any amount for both apples and pear because he gets equally benefits.
- Luke should spend all his budget on pear.

2. B) $\eta_I^x = \frac{\%\Delta x}{\%\Delta I} = \frac{25-20/20}{150-120/120} = \frac{25\%}{25\%} = 1 > 0$

when B increases, consumers consume x more.

C) $\eta_I^y = \frac{\%\Delta y}{\%\Delta I} = \frac{18.75-15/15}{150-120/120} = \frac{25\%}{25\%} = 1 > 0$

when B increases, consumers consume y more.

$3(25) + 4y_1 = 150$

$y_1 = \frac{150-75}{4}$

$y_1 = 18.75$