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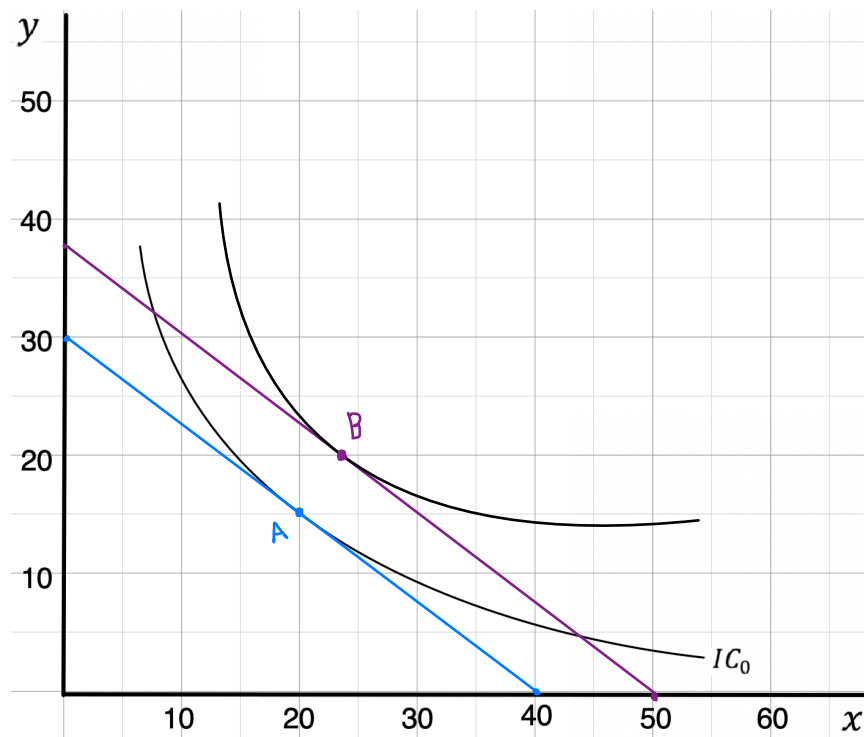
#1

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?

$$3x + 4y = 120 \rightarrow \frac{B}{P_y} = \frac{120}{4} = 30$$

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

$$\text{slope} = -\frac{30}{40} = -0.75$$

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

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

$$\text{slope} = -\frac{37.5}{50} = -0.75$$

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

apples

$$\frac{6}{1} = 6$$

$$\frac{6}{1} = 6$$

$$\frac{6}{1} = 6$$

$$\frac{3}{1} = 3$$

$$\frac{3}{1} = 3$$

pears

$$\frac{12}{2} = 6$$

$$\frac{6}{2} = 3$$

$$\frac{3}{2} = 1.5$$

$$\frac{6}{2} = 3$$

$$\frac{12}{2} = 6$$

This table show who optimizes choices of fruits that need to consider on MU / dollar for apples and for pears.

The sum of MU \rightarrow Claire $>$ Phil = Luke $>$ Haley $>$ Alex

Haley spend all on apple

phil spend all on apples

Luke spend all on pears

Alex spend all on either apples or pears

finally it will give you same result only for \$ that is even but not for odd \$

$$\begin{aligned} \text{Original} &= 3x + 4y = 120 \\ \text{New} &= 3x + 4y = 150 \end{aligned}$$

Equ point Before (20, 15)

Equ point After (25, 16.75)

$$\begin{aligned} &\downarrow \\ &3(25) + 4y = 150 \\ &y = 16.75 \end{aligned}$$

From informatio, $z_I^x = 1$

$$\frac{\% \Delta x}{\% \Delta I} = \frac{? - 20}{20} = \frac{150 - 120}{120} = 1 \quad = 25$$

$$z_I^y = \frac{\% \Delta y}{\% \Delta I} = \frac{16.75 - 15}{15} = \frac{1.75}{15} = \frac{150 - 120}{120}$$

$$= \frac{3.75}{15} \bigg/ \frac{1}{4} = 1$$

$$\therefore z_I^y = 1$$