#1

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

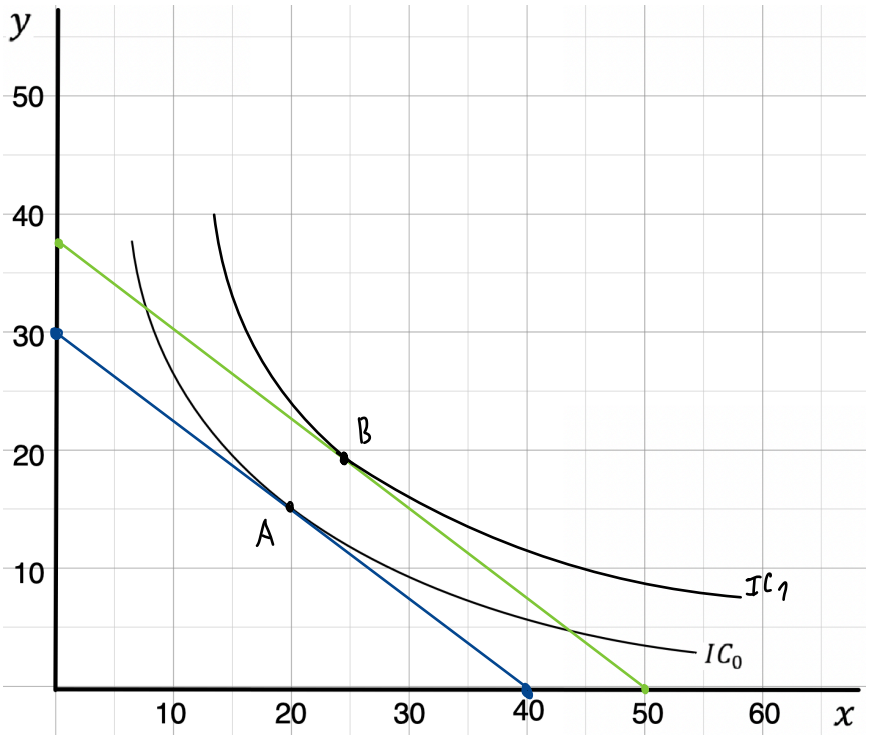
	Marginal Utility of Apples	Marginal Utility of Pears
Claire	6	12
Phil	6	6
Haley	6	3
Alex	3	6
Luke	3	12

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

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

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



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

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

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

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 with regard to the given table, to know that who optimizes their choices of fruit, we need to consider on MU per dollar for apples, and MU per dollar for pears.

	Marginal Utility of Apples	Marginal Utility of Pears	MU per $ for apples	MU per $ for pears
Claire	6	12	6/1 = 6	12/2 = 6
Phil	6	6	6/1 = 6	6/2 = 3
Haley	6	3	6/1 = 6	3/2 = 1.5
Alex	3	6	3/1 = 3	6/2 = 3
Luke	3	12	3/1 = 3	12/2 = 6

the sum of MU → Claire > Phil = Luke > Haley > Alex

↓

best optimization

For change of the others

Phil → spend all budget on apples

Luke → spend all budget on pears

Haley → spend all budget on apples

Alex → Spending all budget on either is the same result * for even $ like (2, 4, 6, 8, ... 2n) $ but should spend all budget on apple * for odd $ like (1, 3, 5, 7, 9, ... 2n-1) $

explaining

- for even $ → 4 $
  all apples → MU = 3x4 = 12
  all pears → MU = 6x2 = 12
) same

- for odd $ → 5 $
  all apples → MU = 3x5 = 15
  all pears → MU = 6x2 = 12
) 15 > 12

2 (B) original equation ; $3x + 4y = 120$

new equation ; $3x + 4y = 150$

Before at equi. point (20, 15)

After at equi. point (25, 18.75) → $3(25) + 4y = 150$

$y = 18.75$

With regard to the given information, $\eta_I^x = 1$

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

(C) $\eta_I^y = \frac{\%\Delta Y}{\%\Delta I} = \frac{18.75 - 15}{15} \Big/ \frac{150-120}{120}$

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

Ans.

$\therefore \eta_I^y = 1$

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