

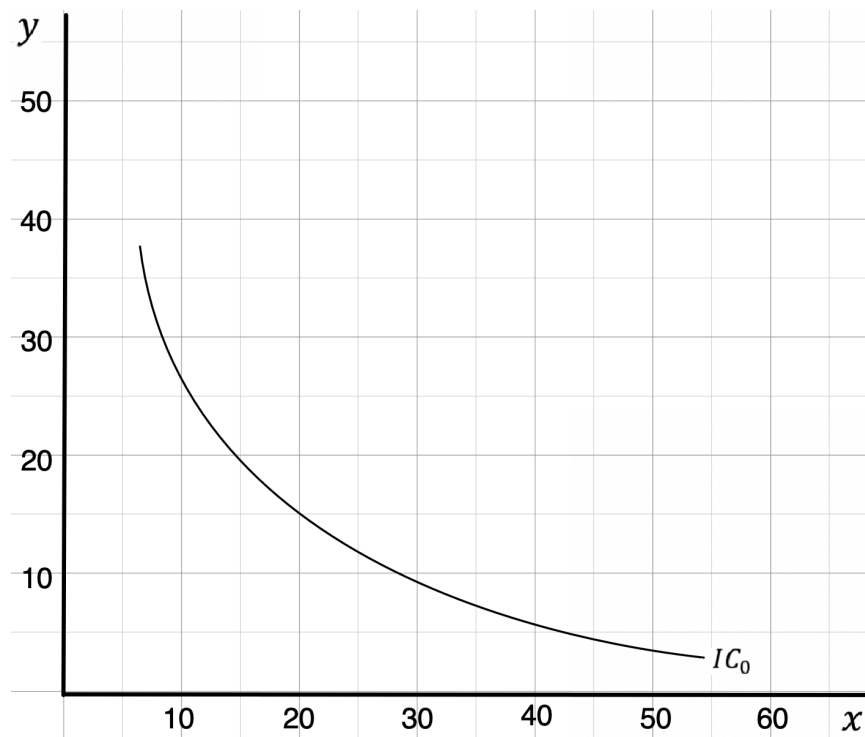
#1

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.



- Draw the budget line and find the equilibrium with the given indifference curve IC in the diagram below.
- 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.
- With the change of equilibrium you found in (B), what will be the Income Elasticity of y ?

1.

From $\frac{MU_x}{MU_y} = \frac{P_x}{P_y}$

$$\frac{MU_x}{P_x} = \frac{MU_y}{P_y}$$

- From the table, we can conclude that Claire and Alex had optimized their choices already
- Phil and Haley should buy more apples
 - Luke should buy more pears

2.

a.) $3x + 4y = 120$

at $x = 0$, $y = \frac{120}{4} = 30$

$y = 0$, $x = \frac{120}{3} = 40$

b.) $3x + 4y = 150$

at $x = 0$, $y = \frac{150}{4} = 37.5$

$y = 0$, $x = \frac{150}{3} = 50$

$$n_1^x = \frac{\% \Delta X}{\% \Delta I}$$

$$1 = \frac{\% \Delta X}{(150-120)/120}$$

$$1 = \frac{\% \Delta X}{0.25}$$

$$0.25 = \Delta X$$

$\therefore X \uparrow$ by 25%

from 20 to $20 \times 1.25 = 25$

\therefore Eqn is $(25, 18.75)$

c.) at eqn $(x_1, y_1) \rightarrow (25, 18.75)$

$$n_1^y = \frac{\% \Delta Y}{\% \Delta I} = \frac{(18.75 - 15)/15}{0.25} = 1$$

the income Elasticity of y is also equal to 1