

#1

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

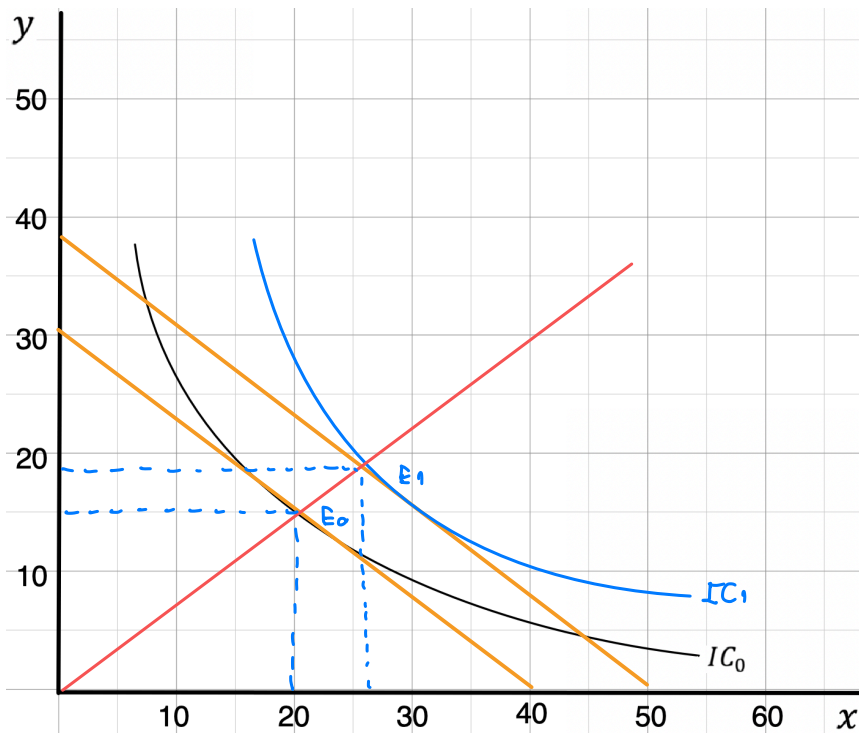
	Marginal Utility of Apples MU_A	Marginal Utility of Pears MU_P	$\frac{MU_A}{MU_P}$
Claire	6	12	$\frac{1}{2}$
Phil	6	6	1
Haley	6	3	2
Alex	3	6	$\frac{1}{2}$
Luke	3	12	$\frac{1}{4}$

$P_A = 1$

$P_P = 2$

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?

$$1) P_a = 1$$

$$P_p = 2$$

Max Condition

$$\frac{P_a}{P_p} = \frac{MU_a}{MU_p}$$

Claire

$$\frac{1}{2} = \frac{6}{12}$$

$$\frac{1}{2} = \frac{1}{2}$$

correct

phil

$$\frac{1}{2} = \frac{6}{6}$$

$$\frac{1}{2} \neq 1$$

wrong

consumes more
apples until
 $MU_a = 3$

Haley

$$\frac{1}{2} = \frac{6}{3}$$

$$\frac{1}{2} \neq 2$$

wrong

consumes fewer
apples until
 $MU_a = 12$

Alex

$$\frac{1}{2} = \frac{3}{6}$$

$$\frac{1}{2} = \frac{1}{2}$$

correct

Luke

$$\frac{1}{2} \neq \frac{3}{12}$$

wrong

consumes more
pears until
 $MU_p = 6$

$$B) \text{ Elasticity} = \% \Delta I = \frac{150-120}{120} = 0.25 = 25\%$$

Income elasticity of $x = 1$

$$\% \Delta Q_x = \frac{Q_x^1 - Q_x^0}{Q_x^0} = 0.25$$

$$Q_x^1 = 0.25 Q_x^0 + Q_x^0$$

$$Q_x^1 = 0.25(20) + 20 = 25$$

\therefore When income is change from 120 to 150 . consumption of x is increase from 20 to 25

From the budget line $3x + 4y = 150$

$$3(25) + 4y = 150$$

$$y = 18.75$$

$$c) \quad w_{Iy} = \frac{\% \Delta Q_y}{\% \Delta I} = \frac{18.75 - 15}{15} \div 0.25$$

$$= 1$$