

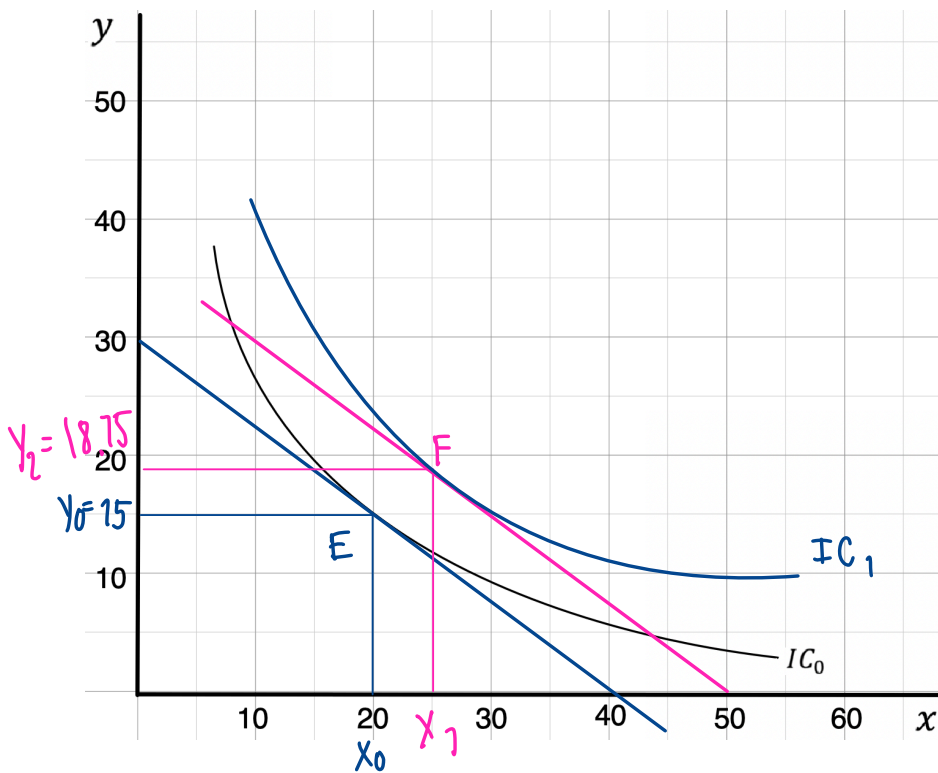
#1

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?

$$\begin{aligned}
 3x + 4y &= 120 \\
 \frac{B}{P_y} &= \frac{120}{4} = 30 \\
 \frac{B}{P_x} &= \frac{120}{3} = 40
 \end{aligned}$$

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

$$\begin{aligned}
 3x + 4y &= 150 \\
 y \frac{150}{4} &= 37.5 \\
 x \frac{150}{3} &= 50
 \end{aligned}$$

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

#1

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

	Marginal Utility of Apples	Marginal Utility of Pears	Marginal utility per \$ of Apple	" of Pears	€
Claire	6	12	$6/1 = 6$	$12/2 = 6$	12
Phil	6	6	$6/1 = 6$	$6/2 = 3$	9
Haley	6	3	$6/1 = 6$	$3/2 = 1.5$	7.5
Alex	3	6	$3/1 = 3$	$6/2 = 3$	6
Luke	3	12	$3/1 = 3$	$12/2 = 6$	9

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?

Finding consumer that optimize their choice of fruit, Marginal utility/dollar can be applied  
→ the amount of extra utility (additional) → that consumer receives given the goods' price

Conclusion: From table, Claire and Alex => had already optimized their choice

→ Phil + Haley => should buy more "Apples"

→ because it gives more utility / one unit price

→ Luke => should buy more "pears"

→ It gives more utility as well

\* Claire => best optimizing her choice!  
(highest total marginal utility/\$ of apple and pear.)

2. The old eq condition =  $3x + 4y = 120$

The new " =  $3x + 4y = 150$

→ used for consuming  $x_0 = 20, y_0 = 15$

→ consume x move

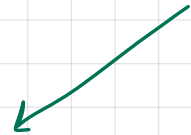
=  $x_1 = 25, y_1 = 18.75$

from 120 → 150 = 25% = % Δ I

from 20 → 25 = 25% = % Δ x

from 15 → 18.75 = 25% = % Δ y

$$\begin{aligned}
 & \uparrow 3(25) \\
 & 150 + 4(y_1) = 150 \\
 & \frac{150 - 75}{4} = y_1 \\
 & = 18.75
 \end{aligned}$$



2b)  $\eta_I^x$   $\frac{\% \Delta X}{\% \Delta I} \rightarrow \frac{25}{25} = 1, 1 > 0 = B \uparrow, X \uparrow$   
 $\therefore$  when  $B$  increases,  $X \uparrow$  (consume  $X$ )

2c)  $\eta_I^y$   $\frac{\% \Delta Y}{\% \Delta I} \Rightarrow \frac{25}{25} = 1, 1 > 0 = B \uparrow, Y \uparrow$   
 $\therefore$  when  $B$  increases,  $Y \uparrow$  (consume  $Y$ )