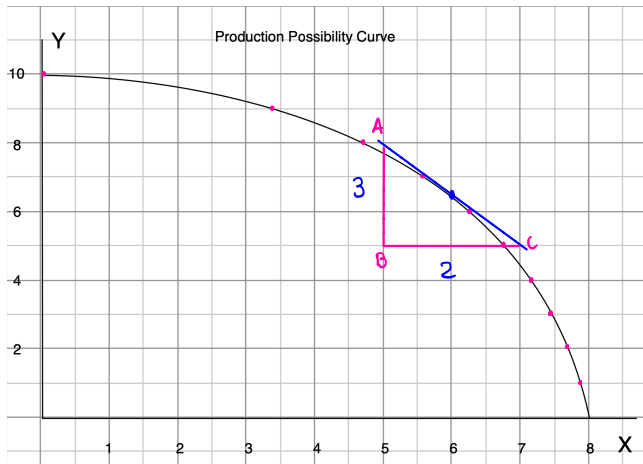


Phasin Tangsamritkul 6304641001

HW Nonlinear PPC



a) Find the opportunity cost of each additional unit of y in terms of units of x

y	x	Opp. Cost of y	
0	8	} Less of x	
1	7.86		↓ 0.14
2	7.74		↓ 0.12
3	7.47		↓ 0.27
4	7.25		↓ 0.22
5	6.75		↓ 0.50
6	6.25		↓ 0.50
7	5.62		↓ 0.63
8	4.66		↓ 0.96
9	3.47		↓ 1.19
10	0	↓ 3.4	

b) Is the opportunity cost of y increasing? **Ans** Yes, it is

c) Compute the opportunity cost per unit of y when x = 6.

d) At x = 6, approximate how much more x can be produced if we have y less by 0.2 units. $\Delta Y = -0.2$

First: Make tangent line to find a slope

Point A (5,8) Point B (5,5) Point C (7,5)

A to B = 3 slope = $\frac{-3}{2} = -1.5$

B to C = 2

Opportunity cost per unit of Y

$= \frac{\Delta x}{\Delta Y} = \left(\frac{\Delta Y}{\Delta x}\right)^{-1} = (-1.5)^{-1}$

ANS = -0.67

Can a PPC have positive slope?

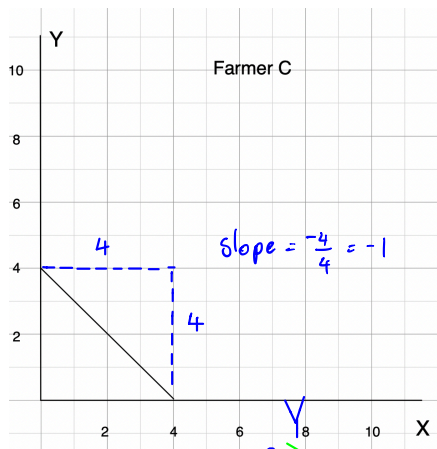


Note: $\frac{\Delta Y}{\Delta x} = -1.5$ at $x = 6$, $\Delta Y = -0.2$

$-\frac{\Delta Y}{\Delta x} = -1.5 \Rightarrow \frac{-\Delta Y}{-1.5} = \Delta x = \frac{-0.2}{-1.5} = \Delta x$

ANS = 0.133

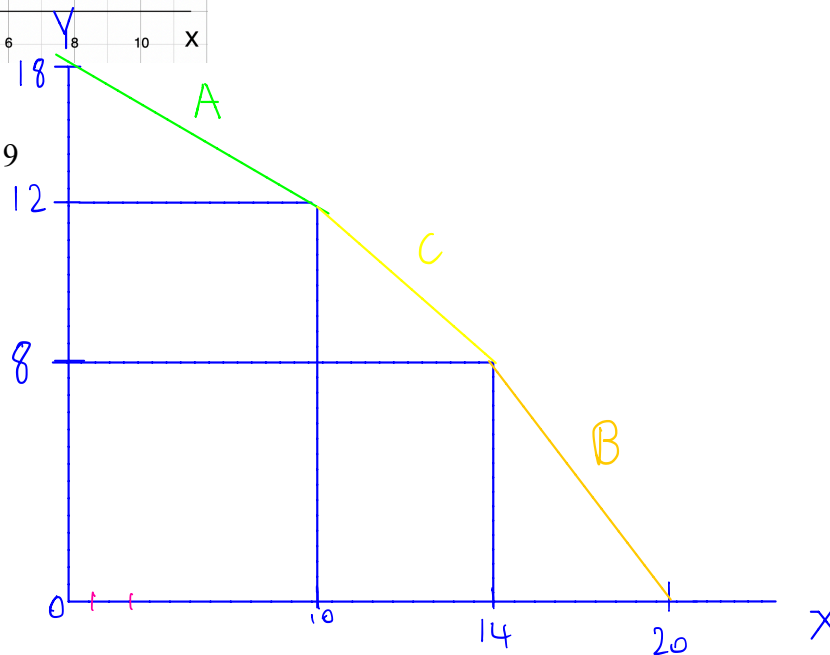
HW Farmer C has the PPC given below. Find the PPC of all three farmers A, B and C combined.



opp cost A < opp cost C < opp cost B
6 4 8

Change in PPC

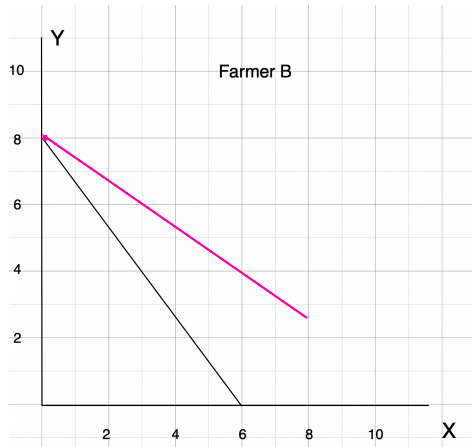
1. COVID-19



2. Improvement of Technology of producing both x and y.

X	Y
0	18
1	17.2
2	16.5
10	12
14	8
12	0

HW. If a new fertilizer is found to double the output of rice (x) for any level of production of fish (y), how will PPC of farmer B change? Does the opportunity cost of x increase? Does the opportunity cost of y increase?



opp cost of x

$$\bullet \frac{\Delta Y}{\Delta X} \rightarrow \frac{\Delta Y}{2\Delta X} \rightarrow \text{double the output}(x) = \frac{1}{2} \text{ opp cost of old formula}$$

old new

Note: Mean of old > Mean of New

Ans No, It doesn't increase

Opp cost of y

$$\bullet \frac{\Delta X}{\Delta Y} \rightarrow \frac{2\Delta X}{\Delta Y} \rightarrow \text{double the output}(x) = \frac{1}{2} \text{ opp cost of old formula}$$

old new

Note: Mean of New > Mean of old

Ans Yes, It does increase