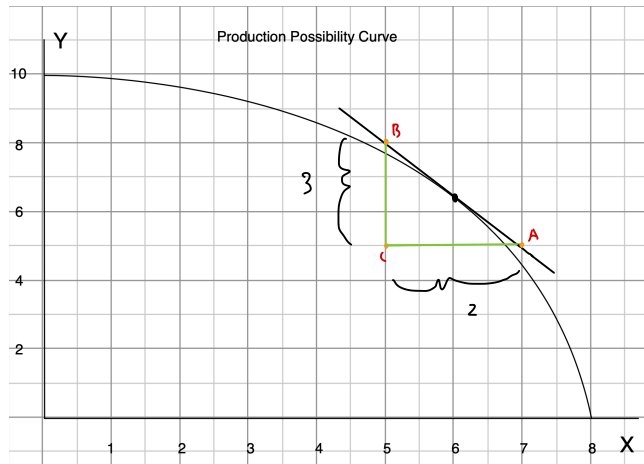


For [b] - Yes, it is

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	
1	7.89	0.11 less of x
2	7.68	0.12 less of x
3	7.49	0.19 less of x
4	7.23	0.26 less of x
5	6.75	0.48 less of x
6	6.25	0.5 less of x
7	5.61	0.64 less of x
8	4.75	0.86 less of x
9	3.38	1.37 less of x
10	0	3.38 less of x

- b) Is the opportunity cost of y increasing?
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.

Can a PPC have positive slope?

For [c] - Finding a slope by using tangent line

sol Point A: (7, 5) Point B: (5, 8) Point C: (5, 5)
 $|BC| = 3$, $|AC| = 2 \rightarrow \text{slope} = \frac{\Delta y}{\Delta x} = \frac{-3}{2} = -1.5$

but we find opportunity cost per unit of y which is equal to $\frac{\Delta x}{\Delta y} = \left(\frac{\Delta y}{\Delta x}\right)^{-1} = (-1.5)^{-1} = -0.67$

$\therefore \text{Ans } = -0.67$

For [d] - Finding how much more x

sol since $\frac{\Delta y}{\Delta x} = -1.5$ at $x = 6$

y less by 0.2 units $\rightarrow \Delta y = -0.2$

$\frac{\Delta y}{\Delta x} = -1.5 \rightarrow \Delta x = \frac{\Delta y}{-1.5} = \frac{-0.2}{-1.5} \approx 0.13$

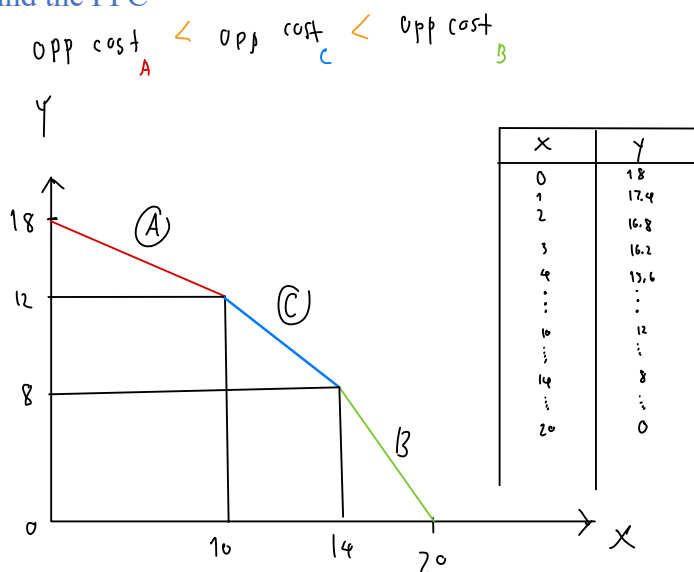
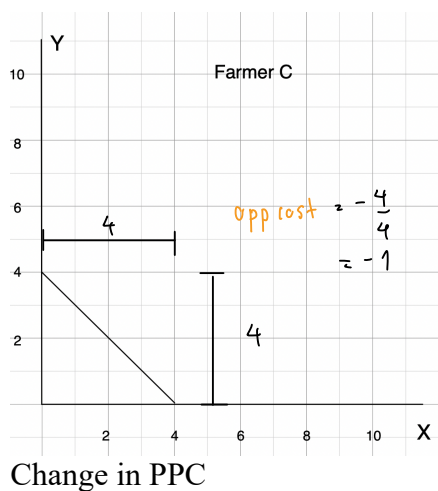
$\therefore$ approximately move 0.13 of x

Pat chayan

Korsurat

6304640979

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



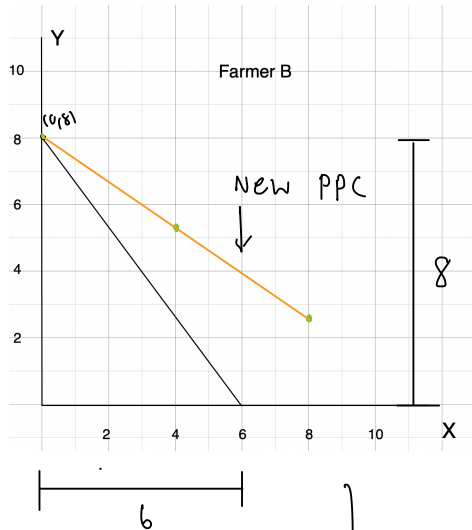
1. COVID-19

Pat chayan
Korsurat

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

6304640979

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?



Let slope = m

$$\begin{aligned} \frac{\Delta y}{\Delta x} &= m \\ \Delta y &= m \Delta x \\ y - y_1 &= m(x - x_1) \quad \text{--- (A)} \end{aligned}$$

Consider on original PPC

On (0, 8) $\rightarrow$ (A), $y - 8 = -\frac{8}{6}(x - 0)$; $m = \frac{\Delta y}{\Delta x} = -\frac{8}{6}$

$$x = -\frac{6}{8}y + 6 = f(y)$$

Consider on new PPC

double the output (x) for any (y)

so $f(y)_{\text{new}} = 2f(y) = -\frac{6}{4}y + 12$

$$f(y)_{\text{new}} = -\frac{6}{4}y + 12 = x$$

$$y = -\frac{4}{6}x + 8 \quad \text{--- New PPC line}$$

Does the opp cost of x increase?

Since $|m_{\text{original PPC}}| > |m_{\text{New PPC}}|$

So the answer is NO!

Does the opp cost of y increase?

Since $|m_{\text{original PPC}}| > |m_{\text{New PPC}}|$

then $\left| \frac{\Delta x}{\Delta y} \right|_{\text{original PPC}} < \left| \frac{\Delta x}{\Delta y} \right|_{\text{New PPC}}$

So the answer is YES!

Pat chayan
korsurat

6304640979