

B Yes, the opportunity cost of Y is increasing

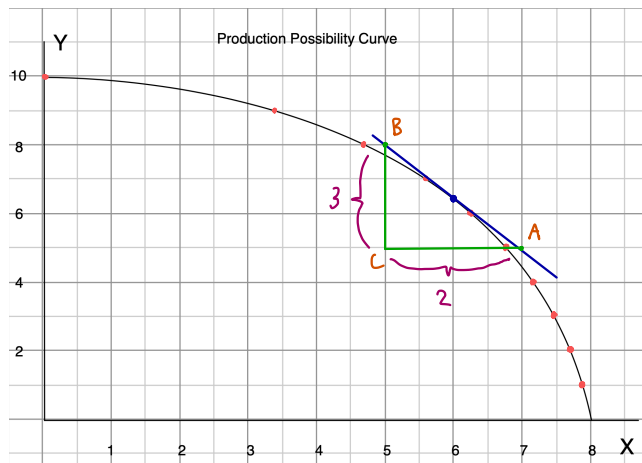
C Use tangent line to find a slope

Point A (7,5) Point B (5,8) Point C (5,5)
B to C = 3
C to A = 2
slope = $\frac{\Delta Y}{\Delta X} = \frac{-3}{2} = -1.5$

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

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	7.88	0.12 less of x
2	7.75	0.13 L
3	7.49	0.26 e
4	7.2	0.29 S
5	6.75	0.45 S
6	6.25	0.5 O
7	5.6	0.65 f
8	4.75	0.85 f
9	3.4	1.35 X
10	0	3.4 X

D from the last question we have $\frac{\Delta Y}{\Delta X} = 1.5$ at $X=6$

so, Y less by 0.2 units = $\Delta Y = -0.2$

$$\frac{\Delta Y}{\Delta X} = -1.5 \rightarrow \Delta X = \frac{\Delta Y}{-1.5} \rightarrow \frac{-0.2}{-1.5} = 0.13$$

Ans ≈ 0.13

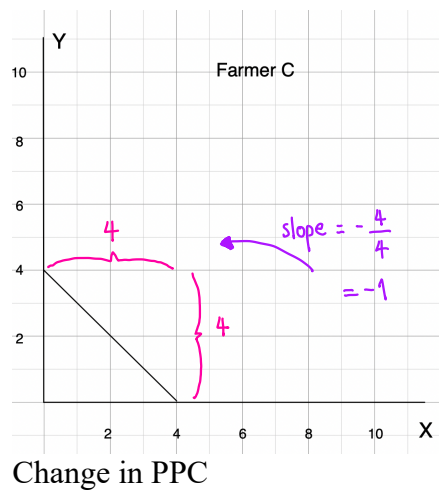
- Is the opportunity cost of y increasing?
- Compute the opportunity cost per unit of y when $x = 6$.
- At $x = 6$, approximate how much more x can be produced if we have y less by 0.2 units.

Can a PPC have positive slope?

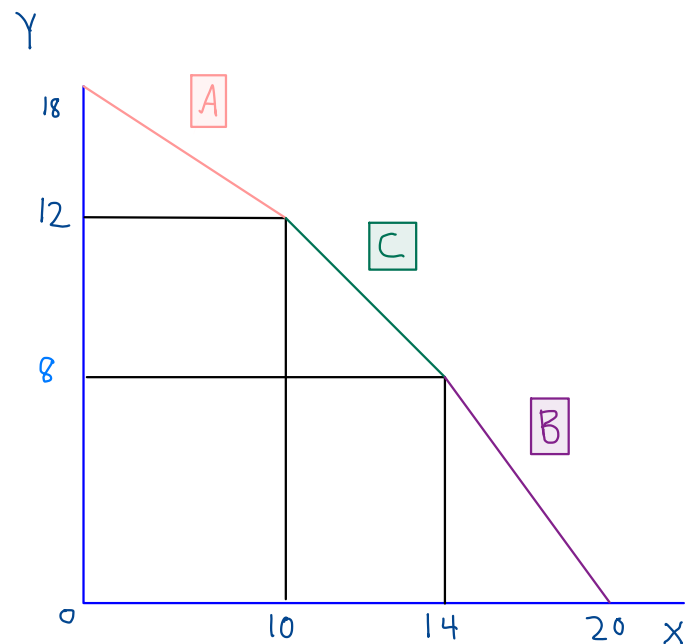
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4 6 8

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



1. COVID-19



$$\text{Opp cost}_A < \text{Opp cost}_C < \text{Opp Cost}_B$$

6 4 8

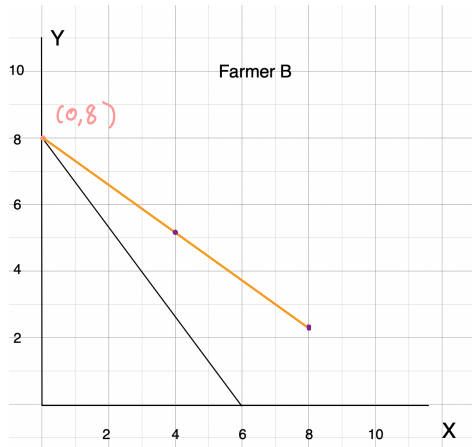
2. Improvement of Technology of producing both x and y .

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X	Y
0	18
1	17.7
2	16.8
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?



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opp cost of X

$$\frac{\Delta Y}{\Delta X}_{\text{original}} \rightarrow \frac{\Delta Y}{2\Delta X}_{\text{new}} \rightarrow \text{New} = \frac{1}{2} \text{ opp cost of original}$$

That mean original is $>$ New

$\therefore$ Ans NO, opp cost of X does not increase

opp cost of Y

$$\frac{\Delta X}{\Delta Y}_{\text{original}} \rightarrow \frac{2\Delta X}{\Delta Y}_{\text{new}} \rightarrow \text{New} = 2 \text{ opp cost of original}$$

That mean New $>$ original

$\therefore$ Ans Yes, the the opp cost of Y increase