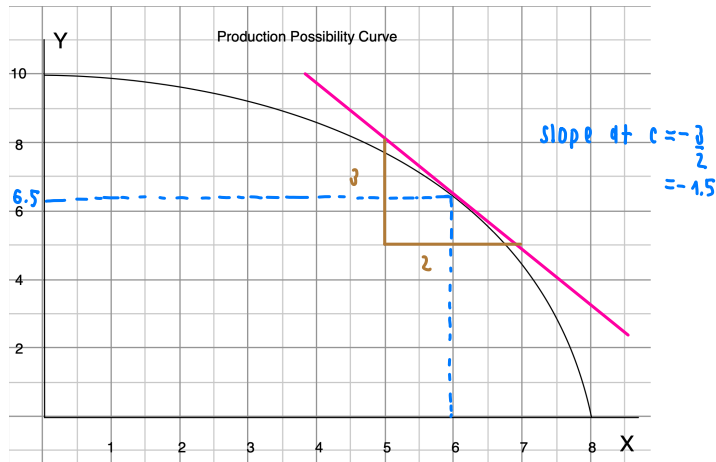


HW 2 Due Thursday, February 4, 2021
1. Nonlinear PPC



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	7.9	0.1 less of x
2	7.7	0.2 less of x
3	7.4	0.3 "
4	7.1	0.3 "
5	6.7	0.4 "
6	6.3	0.4 "
7	5.6	0.7 "
8	4.7	0.9 "
9	3.4	1.3 "
10	0	3.4 "

c) $\frac{1}{\text{slope}} = \frac{1}{-1.5} = -\frac{2}{3} = 0.67$ opportunity cost of y .

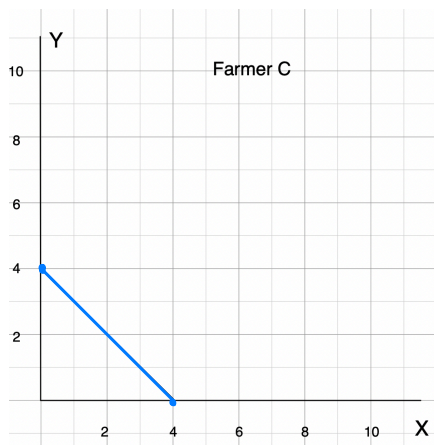
d) $\Delta Y = -0.2$
 $\Delta X = \frac{\Delta Y}{\text{slope}} = \frac{-0.2}{-1.5} = 0.13$ - approx 0.13 unit more of x

b) Is the opportunity cost of y increasing? **yes**

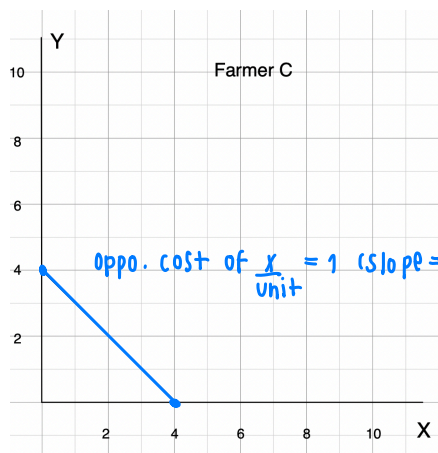
c) Compute the opportunity cost per unit of y when $x = 6$.

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

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

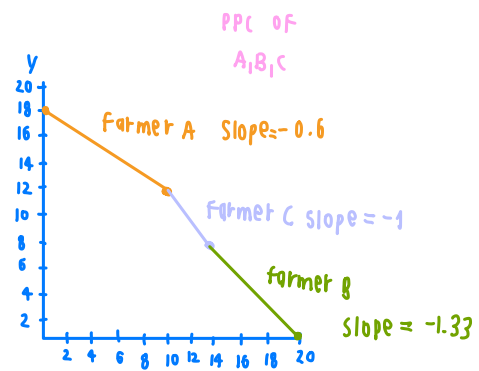


HW Farmer C has the PPC given below. Find the PPC of all three farmers A, B and C combined.



Change in PPC

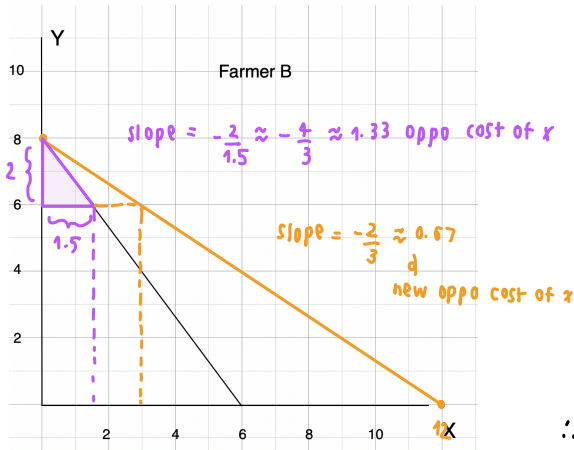
X	Y
0	18
1	17.4
...	...
10	12
11	11
...	...
14	8
15	6.67
...	...
20	0



1. COVID-19

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

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?



At point d $(1.5, 6)$, $\Delta X = 2$

$$\begin{aligned} \Delta Y &= \text{slope of } c \cdot \Delta X \\ &= (-1.33)(2) \\ &= -2.66 \end{aligned}$$

$$\frac{1}{-1.33} = -0.75 = \text{opp cost of } y$$

$$\frac{1}{-0.67} = -1.49 = \text{new opp cost of } y$$

\therefore The opportunity cost of x decreases, but the opp cost of y increases.

1 more unit of $y = 0.67$ units less of x

1 more unit of $x = 1.49$ units less of y