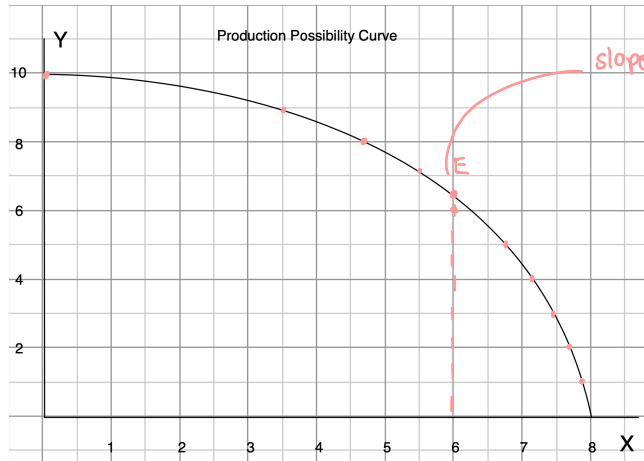


- Knowing the slope, we can approximate if we have 0.1 unit more of x , i.e., $\Delta x = 0.1$, the amount of y we have to sacrifice =

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	0.1
1	7.9	
2	7.7	0.2
3	7.4	0.3
4	7.1	0.3
5	6.75	0.35
6	6.25	0.5
7	5.5	0.75
8	4.7	0.8
9	3.5	1.2
10	0	3.5

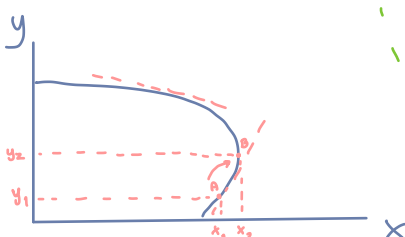
- b) Is the opportunity cost of y increasing? *increases*
c) Compute the opportunity cost per unit of y when $x = 6$.
d) At $x = 6$, approximate how much more x can be produced if we have y less by 0.2 units.

c) slope = $-\frac{1}{1.5}$

d) we have 0.2 less of y
 $\approx -\frac{1}{1.5} (-0.2)$

= 0.13 unit more of x

Can a PPC have positive slope?

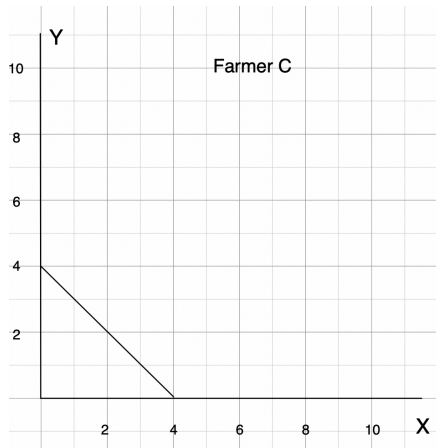


no

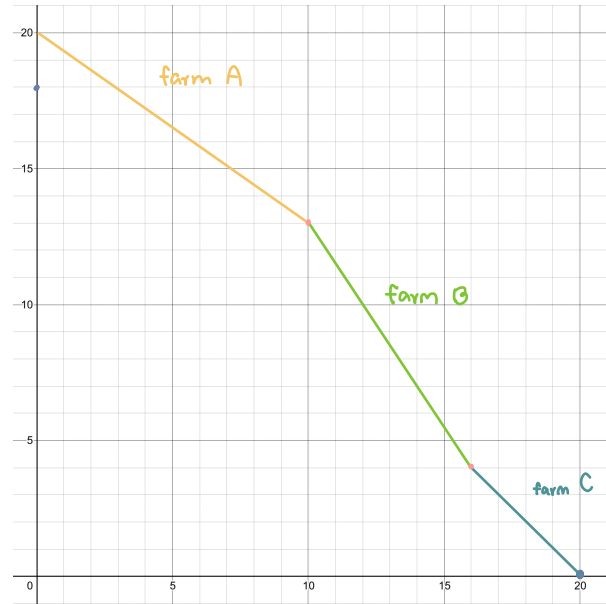
from A to B
 x increases from x_1 to x_2
 y increases — y_1 to y_2
If you doing your best already
how can you $\uparrow$ both x and y at same time

then at A you must be either inefficient
not full employment
or not using the best technology

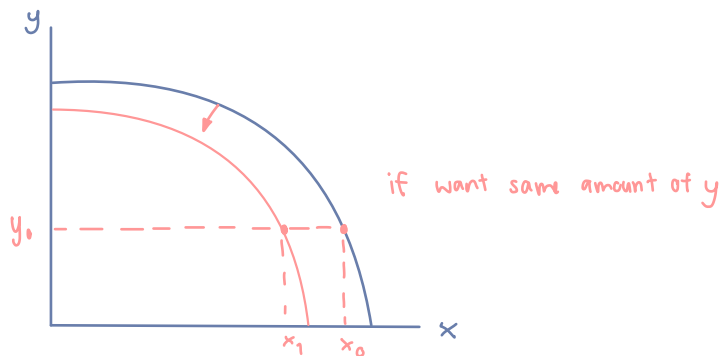
HW Farmer C has the PPC given below. Find the PPC of all three farmers A, B and C combined.



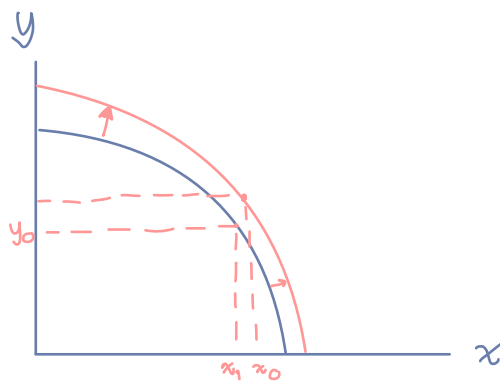
Change in PPC



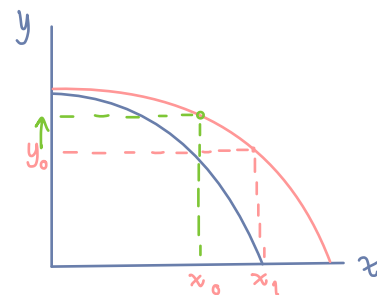
1. COVID-19



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

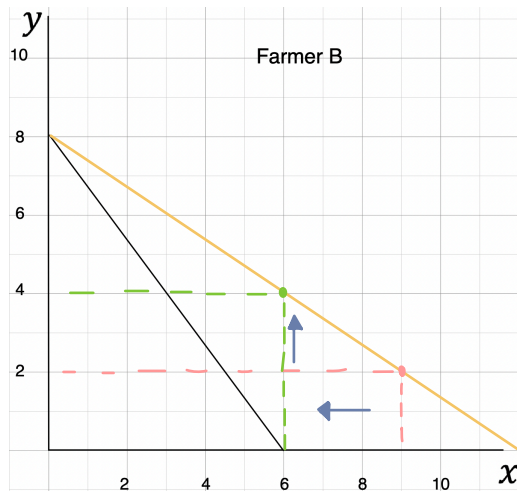


If only the tech of producing x improve



best tech = you can use less resources to produce the same amount of x
more resources left to produce 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?



old B
slope = $-\frac{8}{6} = -1.33 \rightarrow$ cost of x in terms of y

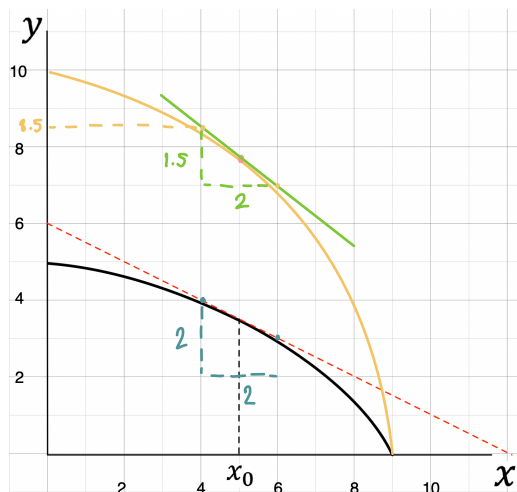
new B
slope = $-\frac{12}{6} = -2 \rightarrow$ cost of x in terms of y

slope = $-\frac{1}{2} = -0.5 \rightarrow$ cost of y in terms of x
 $\rightarrow$ opportunity cost of x is increasing
 $\rightarrow$ opportunity cost of y is decreasing
 more resources left to produce y

HW. Given the PPC below,

- What is the opportunity cost of x at $x_0 = 5$?
- Suppose the technology of producing y improves so that the economy can double the output of y for any output level of x . Draw the new PPC.
- What is the opportunity cost of x at $x_0 = 5$ for the new PPC?

a) slope = $-\frac{2}{2} = -1 \rightarrow$ cost of x in terms of y



c) slope = $-\frac{1.5}{2} = -0.75$