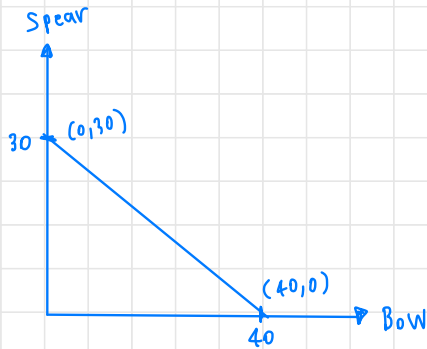


①

1a)



1b) Opportunity cost of spear . $\frac{\Delta B}{\Delta S} = \frac{40-0}{0-30} = -\frac{4}{3} \approx 1.33$

∴ if we produce 1 more spear, we must sacrifice 1.33 bow

1c) if we produce 30 spear $\Rightarrow$ 0 bow

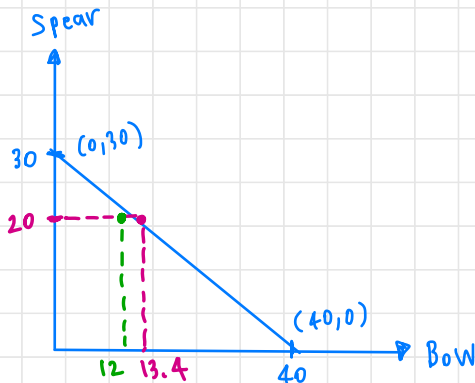
if we produce 0 spear $\Rightarrow$ 40 bows

∴ if we produce 1 spear $\Rightarrow$ loss 1.33 bows

if we produce 20 spear $\Rightarrow$ loss $20 \times 1.33 = 26.6$ bows

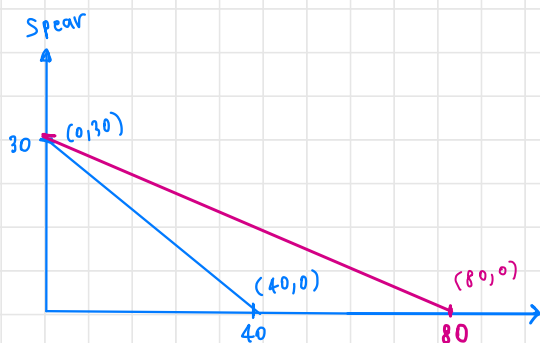
∴ we will have 20 spear and $40 - 26.6 = 13.4$ bows

∴ we can produce 20 spear and 12 bows



1d)

- Wood 120 units
- spears use 4 woods (able to produce only 30 unit)
 - bow use 3 woods (able to produce only 40 unit)
 - New bow use 1.5 woods (able to produce only 80 unit)



1) We can produce more bow while remain the constant production of spear

∴ PPC will shift outward on Bow

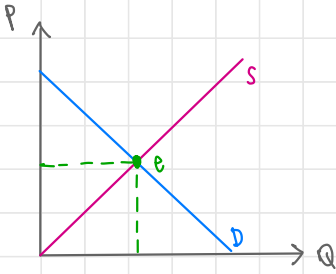
2) Opportunity cost of spear = $\frac{\Delta B}{\Delta S}$

$$= \frac{80 - 0}{0 - 30} = -2.67$$

∴ Opportunity cost of spear ↑

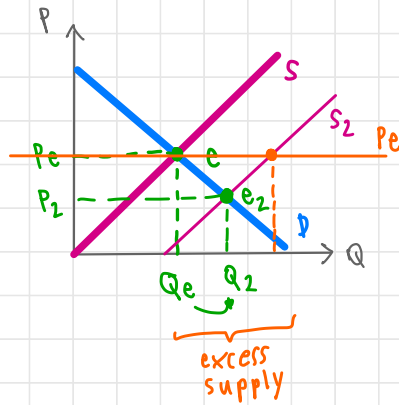
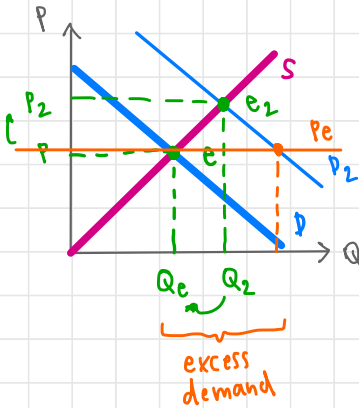
2

2a)



During the pandemic, the market demand of computer devices would change from the normal situation. It's essential and useful for working and studying from home

2b)



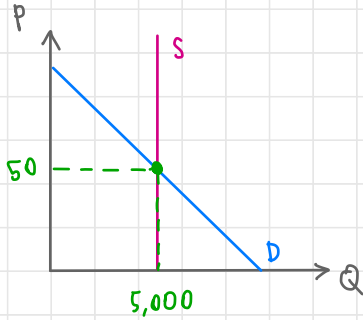
The pandemic does causes the equilibrium price and quantity to increase because when consumers demand to buy a lot, the sellers want to sell it in a large amount as well.

2c)

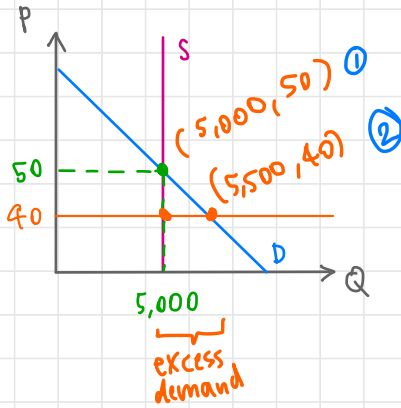
Before the pandemic, the consumer surplus would be less than producer surplus because people may already have devices in their offices or schools. On the other hand, during the pandemic, computer devices are necessary so consumer surplus would be equal or more than producer surplus.

3

3a)



3b)



$$\epsilon_d = \frac{P}{Q} \cdot \frac{Q_2 - Q_1}{P_2 - P_1} = \frac{50}{5000} \cdot \frac{5500 - 5000}{40 - 50} = -\frac{1}{2}$$

$$\epsilon_s = \frac{P}{Q} \cdot \frac{Q_2 - Q_1}{P_2 - P_1} = \frac{40}{5000} \cdot \frac{5000 - 5000}{10} = 0$$