Assignment 1
Assigned on Sep 7th, 2021. To be submitted on Sep 14th, 2021 before midnight.

Instructions

(1) Please read the instruction carefully. Also take this habit with you into the exam room.
(2) Please read each question carefully and answer the questions straightforwardly. Always provide economic reasons at lease a paragraph for your analysis, or a graph when necessary, even when the question does not indicate so.
(3) Handing and submitting assignments are only available via BE Moodle.

Answering the questions and preparing answer sheets

(1) Answers are to be handwritten, in either digital or analog form, in a blank canvas or any clean paper. Make sure that your handwriting is clearly visible and readable.
(2) There is no need to rewrite the question. Just indicate the question number clearly for each of the answer, such as 1.a).
(3) When done, for the digital case, collage all the pages into a single PDF file. For those who write on sheets of paper, take photo of all pages then convert all of them into a single PDF file as well.
(4) Name your PDF file as StudentID_YourNickname, such as 640123456_Bo.

Submitting your answers

(1) Make sure your file does not exceed 10MB. This is the maximum file size for BE Moodle upload.
(2) Login to BE Moodle, head into the course, then the assignment topic.
(3) Choose your file to submit. Done. There will be timestamp for your upload date and time, so please make sure to not submit later than that.

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1. A human civilization finds a new wood source of total 120 units. Wood can either be used to produce spear or bow for hunting. A wood master then calculates that in order to produce a spear, it takes 4 units of wood while 3 units for a bow. Answer the following questions.

1.a) Assumed that the opportunity cost of using this 120 units of wood to produce the products is constant, draw a production possibility curve (PPC), displaying quantity of spear on the vertical axis and quantity of bow on the horizontal axis, and indicate all the essential details in the graph and explain.

1.b) How much is the opportunity cost for a spear, in terms of bow? Show how you calculate this figure.

1.c) With this newly found resource, is it possible for this civilization to produce 20 spears and 12 bows? If it is, is this option efficient? Display this option on a graph from (a) and explain.

1.d) If a new method of making bow is discovered and requires only 1.5 units of wood for each bow, how does it affect the PPC and the opportunity cost for a spear? Illustrate the change and explain.

1 spear ใช้ 4 woods มี 120 woods spear อย่างเดียวได้ 30 spear (0,30)
1 Bow ใช้ 3 woods Bow อย่างเดียวได้ 40 Bows. (40,0)

2. Assumed that a computer devices market is perfectly competitive, answer the following questions in detail.

2.a) Draw a graph showing that the computer devices market is in equilibrium at a certain original equilibrium price P_0 and equilibrium quantity Q_0 During the pandemic, many people are assigned to work from home and computer devices are crucial. Does the market demand or market supply of computer devices change? Explain.

2.b) After what happened in 2.a), at the original equilibrium price P_0 will there be excess demand or excess supply? Show the new market equilibrium and state the equilibrium condition. Does the pandemic cause the equilibrium price and quantity to increase or decrease?

2.c) From the situation in 2.b), compare the consumer surplus and producer surplus in this computer market before and during the pandemic.

Demand (ใหม่): Price ↑ Quantity

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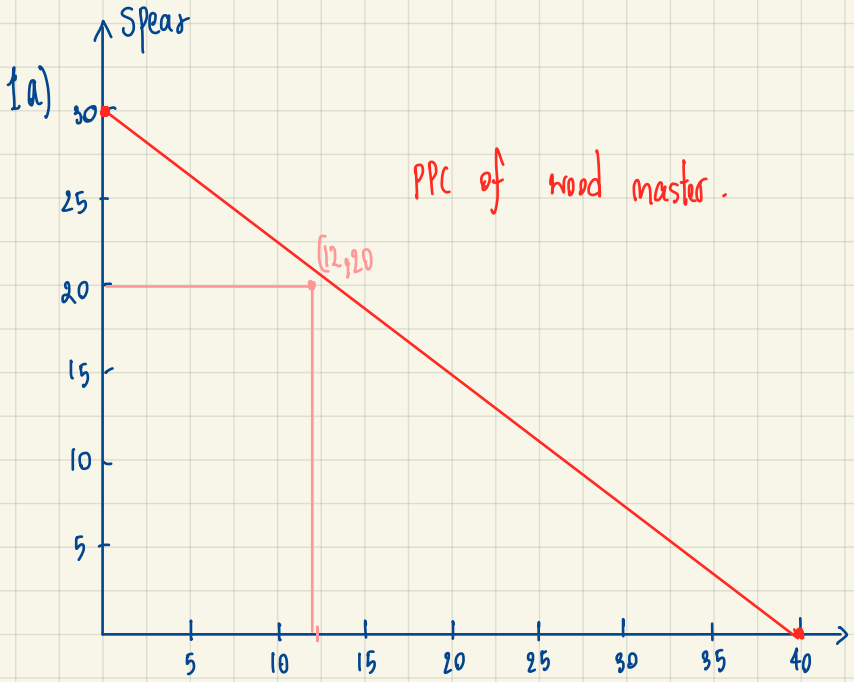
3. Consider a System-on-a-Chip (SoC) market that is assumed to be perfectly competitive, due to a technical problem of production, there are only a few factories that can produce the next generation SoC. Answer the following questions in detail.

3.a) Draw a demand and supply on graph when the demand has normal downward slope while the supply is perfectly inelastic. The equilibrium price is at $50 and the equilibrium quantity is at 5,000 units a day.

3.b) With the situation in 3.a), a study reveals that when the price drops to $40, there will be 500 units of excess demand. Calculate the price elasticity of demand and supply **at the equilibrium**.

3.c) With the situation in 3.a), if a unit tax is imposed on buyers for $10, portray the result of this intervention including the new equilibrium price and quantity, deadweight loss, and tax burden. Also, indicate which part of the burden belongs the either the buyers or the sellers.

1a)



PPC of wood master.

1.b.) Opp Cost of spear : $\frac{\Delta B}{\Delta S} = \frac{40-0}{0-30} = \frac{40}{30} = \frac{4}{3}$ #

Ans produce 1 spear lost $\frac{4}{3}$ bow #

1.C) produce 20 spear and 12 Bow

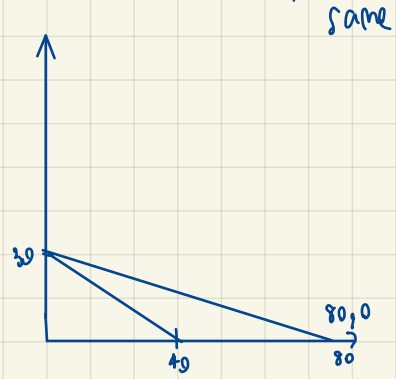
produce 20 spear lost 26.67 Bow.

20 Spear, maximum of 40 - 26.67 = 13.33 bows.

Yes, we can produce but it's inefficient cause we can produce 20 Spears with 13.33 bows (more bows). the option is below PPC.

1d). 1 Bow use 1.5 woods All 120 woods

80 Bows Produce spear the same Bow increase

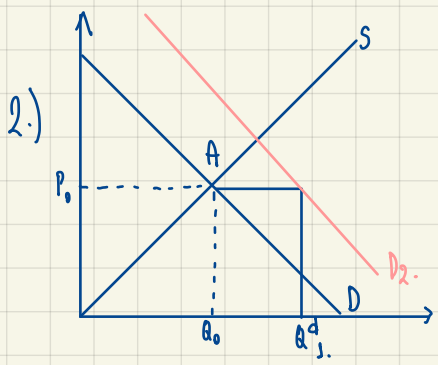


PPF shift outward only for Bow

Opp Cost Spear = $\frac{\Delta B}{\Delta S} = \frac{80-0}{0-30} = \frac{80}{-30} = -\frac{8}{3} = -2.67$ #

Since we can produce more bow the opp. cost of spear will increase. <lose more bow.>

2.)



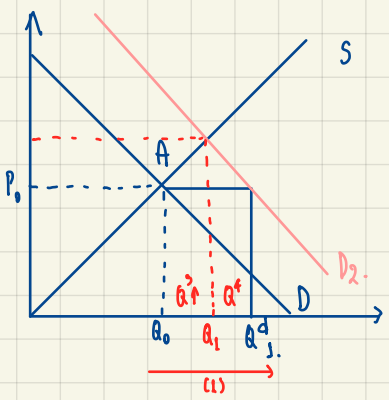
Since, people decide to work from home they need more personal computer for working

the market demand will shift rightward due to increasing quantity demanded for comp.

(2.b) at P_0 : Q^d ↑ from Q^d_0 to Q^d_1 (from shifting D.)

↑ Equilibrium

$\neq Q^d_1 > Q^d_0$ excess demand. into shortage <maximum>



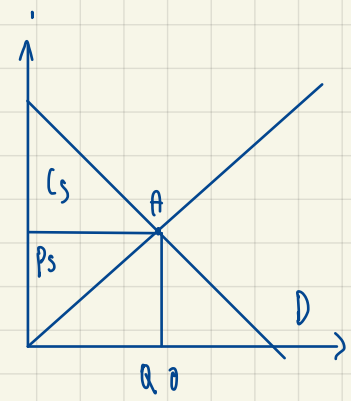
Excess demand will cause the price to increase and adjust both quantity demanded and supplies until $Q^d = Q^s$ at Q_1

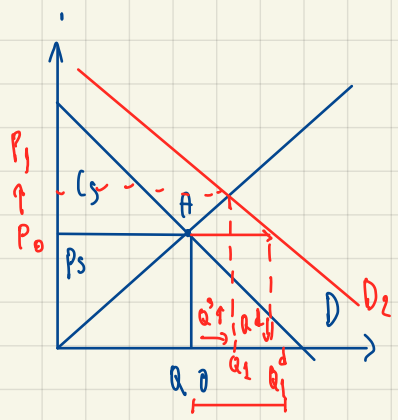
New equilibrium

P_0 : $Q^d > Q^s$ $P\uparrow = P_1$ ↘ Q^s ↗ Q^d

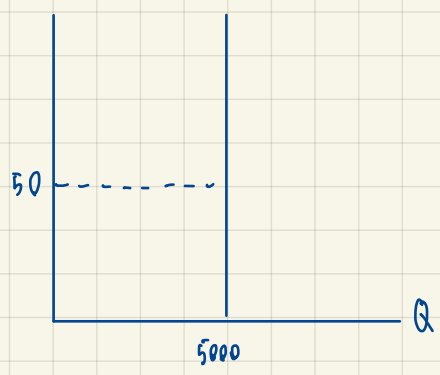
(2.C) before pandemic

(Min Demand into Price) (into Supply Min Price).





3a)

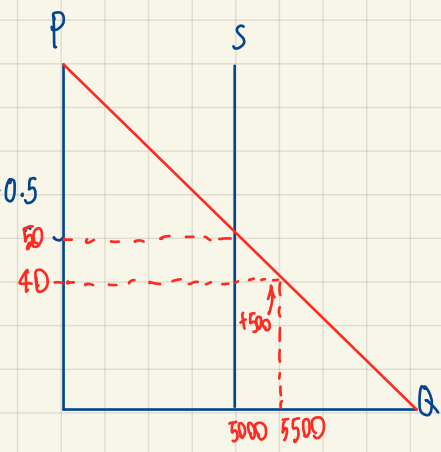


3b.) price elasticity of demand (PED)

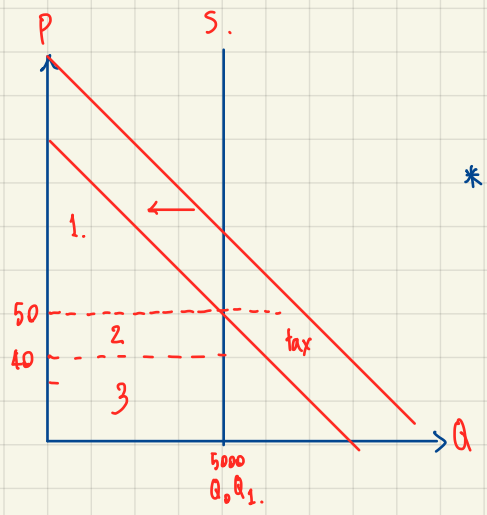
$\frac{\Delta Q}{\Delta P} \times \frac{P}{Q} = \frac{5000-5500}{50-40} \times \frac{50}{5000} = \frac{-500}{10} \times \frac{50}{5000} = -0.5$

Price elasticity supply (PES)

$\frac{\Delta Q}{\Delta P} \times \frac{P}{Q} = \frac{5000-5000}{50-40} \times \frac{50}{5000} = 0$



3C.)



* demand shift left

P↓ : 40

Q : 5000

dwl : 0

tax burden to seller

(50-40) 5000 = 50,000 #