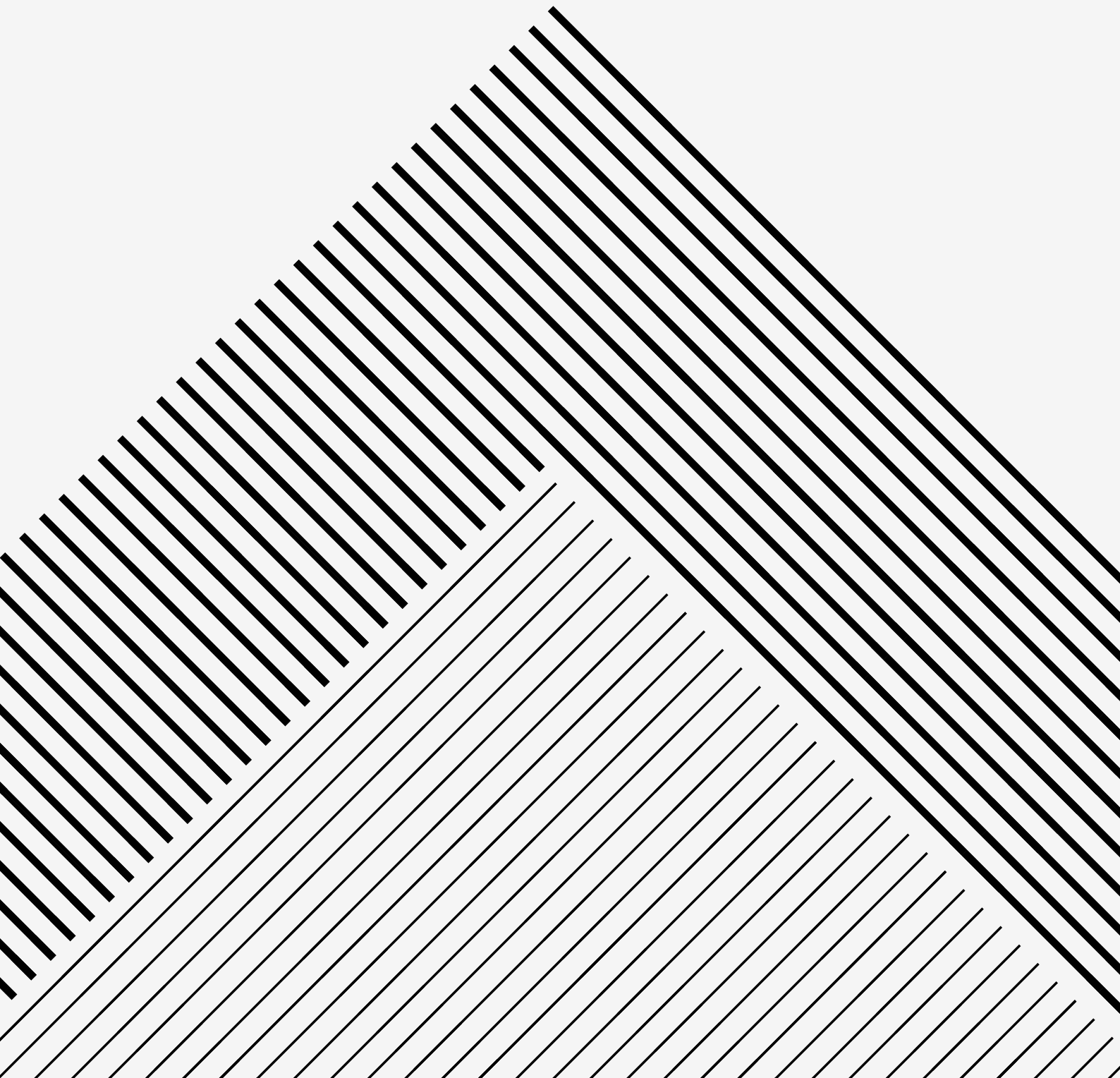

EE211 Assignment #1 (2/2020)

Instructions:

- Assigned date is Thursday the 18th, Feb 2021. Due date is Thursday the 25th, Feb 2021 before class at 08.00 AM.
- Submission is only received through BE Moodle platform as PDF file.
- Name your file as StudentID_nickname, such as 1234567489_Bo.
- There is no need to rewrite the question into your answer sheets, however, indicate clearly question and item number.
- Write your nickname and student ID on top-right corner of the first page.
- For those who do not have a digital device to write on, you can write your answers in sheets of paper, take pictures, convert them to PDF and merge them into a single file.

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1. Suppose that a baker can produce muffins and cupcakes. If she uses all her resources on producing muffins, she can bake 120 muffins. If she produces only cupcakes, she can bake 100 cupcakes.

(a) Draw the Production Possibility Curve of this baker, where the x-axis represents the quantity of muffins and y-axis represents the quantity of cupcakes. Assume that the PPC is a straight line. What is the opportunity cost of each cupcake?

(b) With her available resources, can this baker make 60 cupcakes and 50 muffins? Justify your answer.

(X) If the baker learns a new technique and now the maximum quantity of muffins she can produce is 150 muffins, while the maximum quantity of cupcakes she can produce is still 100 cupcakes, *ceteris paribus*. Will the opportunity cost of each cupcake increase or decrease, and by what amount? Illustrate the change of the Production Possibility Curve of this baker.

Tharithron Suraponggrapa
6304641639

1. Suppose that a baker can produce muffins and cupcakes. If she uses all her resources on producing muffins, she can bake 120 muffins. If she produces only cupcakes, she can bake 100 cupcakes.

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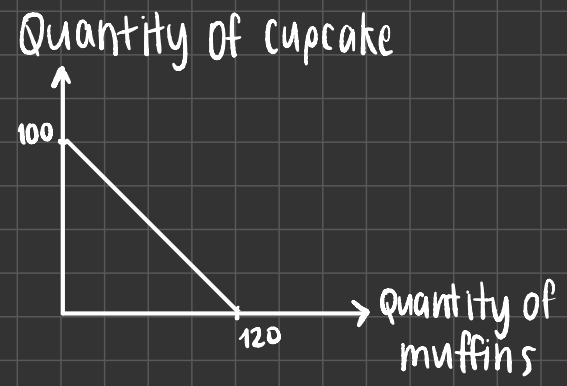


Opportunity cost of each cupcake = $\frac{\text{muffin}}{\text{cupcake}}$

$= \frac{120}{100} = 1.2$ muffin

(b) With her available resources, can this baker make 60 cupcakes and 50 muffins? Justify your answer.

$Q_{cupcake} = -\frac{5}{6} Q_{muffin} + 100$

$60 = -\frac{5}{6} Q_{muffin} + 100$

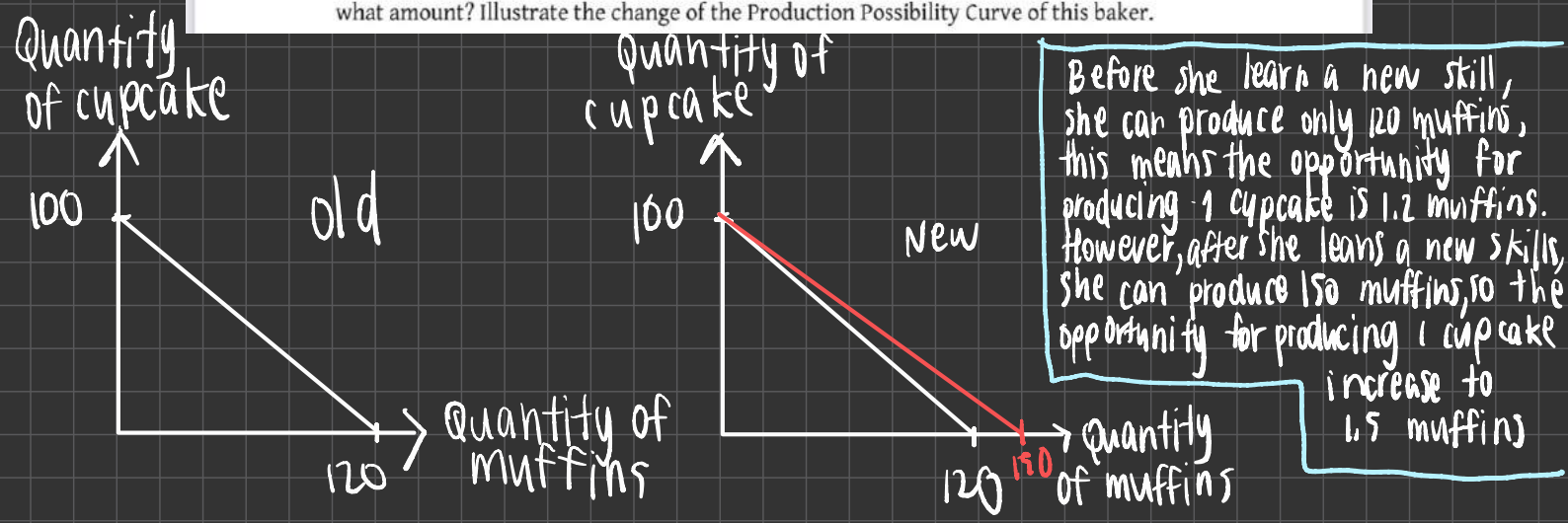
$-\frac{5}{6} Q_{muffin} = -40$

$Q_{muffin} = -40 \cdot -\frac{6}{5} = \frac{240}{5} = 48$

→ If you want to make 60 cupcakes, you can make only 48 muffins.

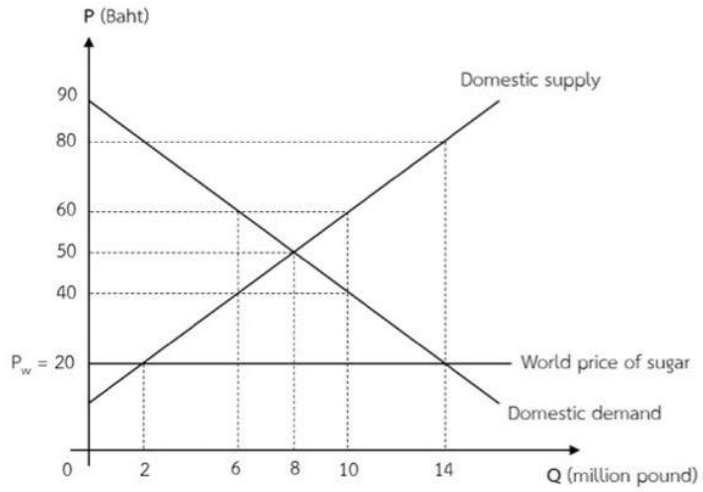
∴ It is impossible to make 60 cupcakes and 50 muffins

(X) If the baker learns a new technique and now the maximum quantity of muffins she can produce is 150 muffins, while the maximum quantity of cupcakes she can produce is still 100 cupcakes, *ceteris paribus*. Will the opportunity cost of each cupcake increase or decrease, and by what amount? Illustrate the change of the Production Possibility Curve of this baker.



Before she learn a new skill, she can produce only 120 muffins, this means the opportunity for producing 1 cupcake is 1.2 muffins. However, after she learns a new skills, she can produce 150 muffins, so the opportunity for producing 1 cupcake increase to 1.5 muffins

2. Supposed that sugar is traded freely in the world market, Thai people consume domestically produced sugar while the rest is imported. Given that world market price is 20 baht per pound and the government decides to set domestic ceiling price equally to the world price, below graph shows domestic demand, supply and world price level. Answer the following questions.



(a) Supposed that Thailand takes world price, how many pounds of sugar is imported at the world price level?

(b) If the government further decides to collect an import unit tax of 20 baht per pound and the price after tax becomes 40 baht per pound,

(c) How much of the sugar is domestically produced in Thailand after tax?

(d) After the import tax is imposed, compute the change in consumer surplus. Also highlight the change in consumer surplus in the provided graph. Are the domestic consumers better off or worse off? Clearly explain your answer.

(e) Compute the government revenue from the import tax and identify its area in the provided graph. Clearly explain why the area identified above represents the government revenue from the import tax.

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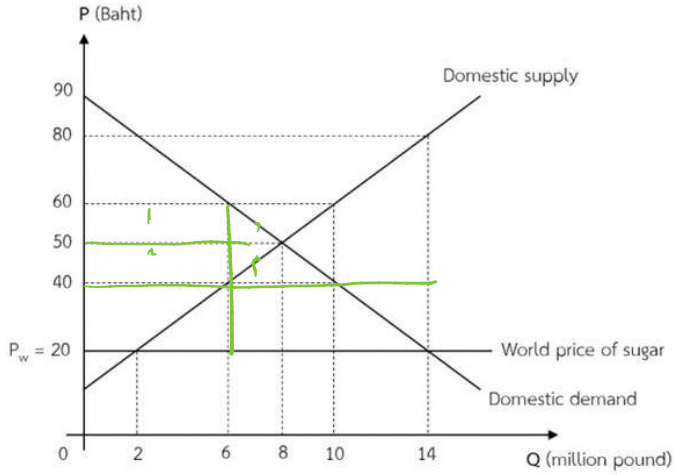


(a) Supposed that Thailand takes world price, how many pounds of sugar is imported at the world price level?

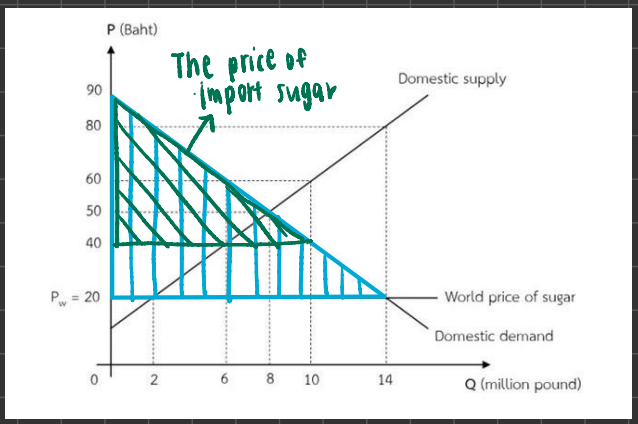
According to the graph, when price of sugar is only 20 ฿ the domestic supply can supply only 2 million pound of sugar. However, when price is 20 ฿, the quantity demanded is 18 million pounds. So there is an excess in demand. Finally, country need to import other 12 million pounds to meet the demand at 18 million pounds

(b) If the government further decides to collect an import unit tax of 20 baht per pound and the price after tax becomes 40 baht per pound,

(c) How much of the sugar is domestically produced in Thailand after tax?

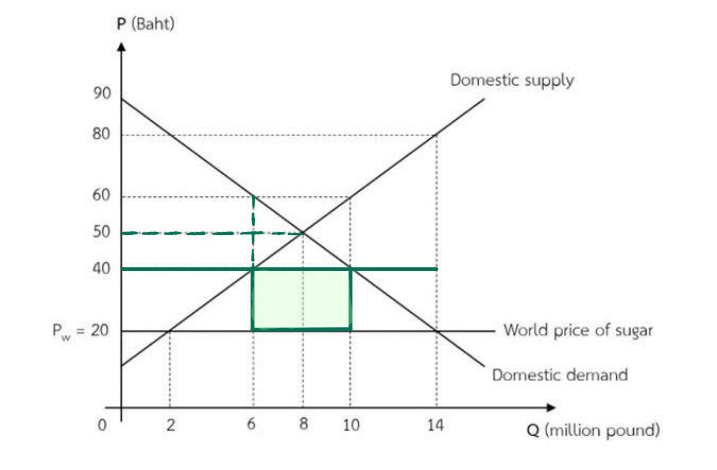
When tax is imposed, it looks like the price is set to 40 ฿ in Thailand. So, when price is 40 ฿, the domestic producers can produce at 6 million pounds.

(d) After the import tax is imposed, compute the change in consumer surplus. Also highlight the change in consumer surplus in the provided graph. Are the domestic consumers better off or worse off? Clearly explain your answer.



The domestic consumers are worst off because the price increase. When price increase, it means some consumers who have willingness to pay at the price below 40 ฿ cannot afford the new price

(e) Compute the government revenue from the import tax and identify its area in the provided graph. Clearly explain why the area identified above represents the government revenue from the import tax.



To begin with, when the price is 40 B, the domestic supplier can supply only 6 million pounds of sugar is 10 million pounds. This means apart from 6 million pounds from domestic suppliers, it needs to be other 4 million pounds from import other 4 million pounds, so the government revenue is 4 million pounds X 20 = 80 million baht

3. Suppose that the quantity demanded for sweetened green tea at Thammasat University is 5,000 bottles per month at the price 20 baht per bottle. Suppose further that the university imposes an excise tax of 5 baht per bottle so that the new price is 25 baht per bottle. At this new price, the quantity demanded drops to 3,000 bottles per month.

(a) Use POINT elasticity to calculate the price elasticity of demand at the NEW price.

(b) Without any calculation, would the total sale revenue from selling sweetened green tea at Thammasat University decrease or increase? Explain by using the concept of price elasticity of demand.

(c) Suppose that, as a result of imposing this tax on green tea, the quantity demanded for "Super Drink" increases from 2,500 to 3,000 bottles per month, all else constant. Calculate the cross-price elasticity of demand for "Super Drink", with respect to the price of sweetened green tea.

(d) From part (c), are sweetened green tea and Super Drink complements or substitutes? Explain.

3. Suppose that the quantity demanded for sweetened green tea at Thammasat University is 5,000 bottles per month at the price 20 baht per bottle. Suppose further that the university imposes an excise tax of 5 baht per bottle so that the new price is 25 baht per bottle. At this new price, the quantity demanded drops to 3,000 bottles per month.

(a) Use POINT elasticity to calculate the price elasticity of demand at the NEW price.

$$E_d = \frac{\frac{Q_2-Q_1}{Q_1}}{\frac{P_2-P_1}{P_1}} = \frac{Q_2-Q_1}{P_2-P_1}\cdot\frac{P_1}{Q_1} = \frac{3{,}000-5{,}000}{25-20}\cdot\frac{20}{5{,}000} = \frac{-2{,}000}{5}\cdot\frac{20}{5{,}000} = \frac{-40{,}000}{25{,}000} = \frac{8}{5} = 1.6$$

(b) Without any calculation, would the total sale revenue from selling sweetened green tea at Thammasat University decrease or increase? Explain by using the concept of price elasticity of demand.

Decrease because the absolute elasticity demand from question A is more than 1. when demand is elastric, it means that when price increase by the demand decrease a lot.

(c) Suppose that, as a result of imposing this tax on green tea, the quantity demanded for "Super Drink" increases from 2,500 to 3,000 bottles per month, all else constant. Calculate the cross-price elasticity of demand for "Super Drink", with respect to the price of sweetened green tea.

P_1 greentea = 20฿ P_2 greentea = 25฿ Q_1 super drink = 2,500 Q_2 super drink = 3,000

$$E_D = \frac{\frac{Q_2-Q_1}{Q_1}}{\frac{P_2-P_1}{P_1}} = \frac{Q_2-Q_1}{P_2-P_1}\cdot\frac{P_1}{Q_1} = \frac{3000-2500}{25-20}\cdot\frac{20}{2500} = \frac{500}{5}\cdot\frac{20}{2500} = 100\cdot\frac{1}{125} = \frac{100}{125} = 0.8$$

(d) From part (c), are sweetened green tea and Super Drink complements or substitutes? Explain.

It is a substituable good because when price of sweetend greentea increase the quantity demanded for super drink is increase. If it's a complementary good when price for product A increase, quantity demand for product B must decrease

4. Consider a liquor market in a country, answer the following questions. If you have any specific assumption, please state them clearly within each item.

(a) Supposed that a Health Foundation which is an independent organization decides to put up a campaign showing how bad can alcoholic beverages affect health condition in long-term through several big billboards, what do you think will happen to this market, equilibrium price and quantity. Support your claim with economic reasoning.

(b) If the government decides to collect unit tax on sellers, show that how would this affects equilibrium price and quantity. Provide a clear explanation with support of a diagram.

(c) There are two groups of liquor consumers: the alcoholic and the occasional drinkers. Does the unit tax affect both groups the same or differently. Provide a clear explanation with support of diagrams.

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4. Consider a liquor market in a country, answer the following questions. If you have any specific assumption, please state them clearly within each item.

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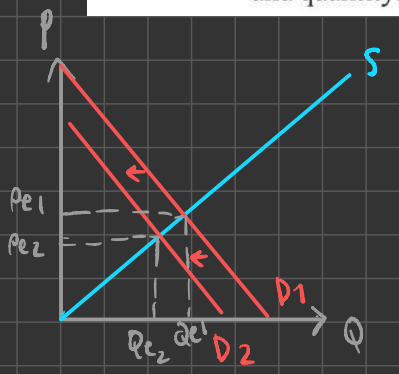
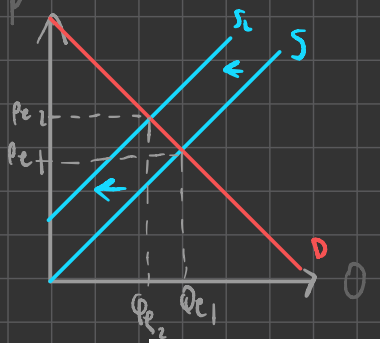


e_1 represents equilibrium point before Health foundation put up a campaign. After Health Foundation puts up campaign, it is an extended factor that causes demand the shift down. Shifting means at the same price level at (Pe_1), the demand decrease. Next, at the new equilibrium (e_2), the price decrease from Pe_1 to Pe_2 and the quality decrease from Qe_1 to Qe_2

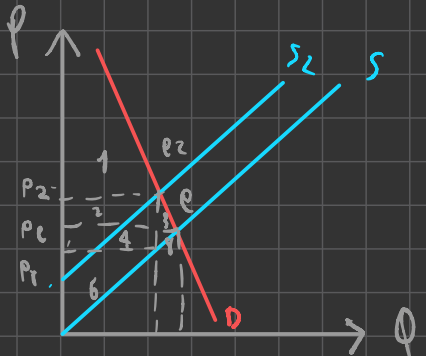
(b) If the government decides to collect unit tax on sellers, show that how would this affects equilibrium price and quantity. Provide a clear explanation with support of a diagram.



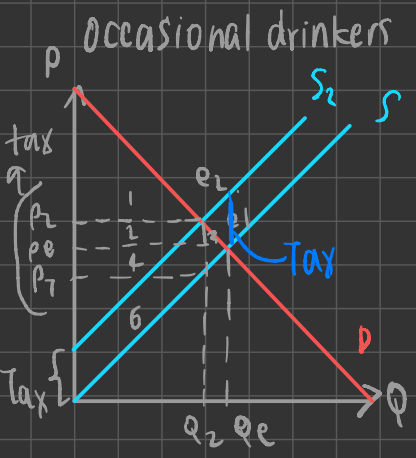
e_1 represents the equilibrium price before government collect unit tax on seller. But after the goverment collects the unit tax, it causes the higher cost of production. Producer can produce at the smaller amount, ($Qe_1 - Qe_2$). When quantity supply decrease, it raises price from ($Pe_1 - Pe_2$). Finally, market is at new equilibrium e_2.

(c) There are two groups of liquor consumers: the alcoholic and the occasional drinkers. Does the unit tax affect both groups the same or differently. Provide a clear explanation with support of diagrams.

Alcoholic



For the alcoholic, they are addicted to the liquior. The demand line for these consumers are inelastic. In other words, no matter where the price is, alcoholic are going to buy nearly the same amount. After government start collecting tax, it increases cost of production. So, supplies will increase the price ($Pe \to P_2$), the amount of price increase from Pe to P_2 will be nearly equivalent to the tax that is collected by government. Also, quantity demanded decrease from Qe to Q_2 but it just a small amount because demand is inelastic. In this case, tax burden will mostly on consumers because the additional price from Pe is nearly equal to the tax that supplies pay to the government.



For the occasional drinkers, unlike alcoholic, they don't think alcohol is neccessary for them. So the demand line will be elastic, means that if the increase, occasional drinkers buy less alcohol. After the government strated to collect tax, the higher cost of production increases the price ($P_e \Rightarrow P_2$). However, the prices that increases can't be as much as the alcoholic. Because of the elastic demand, if the price increase like the alcoholic, the quantity of demand will drop a lot. Last but not least, the tax burden will mostly be on the producer, but consumers also need to take some tax burden from increasing price.