

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?

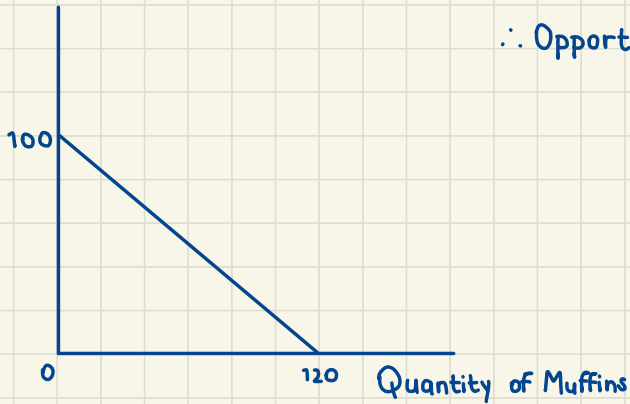
(b) With her available resources, can this baker make 60 cupcakes and 50 muffins? Justify your answer.

(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.

Answer

① a)

Quantity of cupcakes



$$\therefore \text{Opportunity cost} = \frac{5}{6}$$

$$b) \quad y = mx + b$$

$$Q_{\text{cake}} = -\frac{5}{6} Q_{\text{muf}} + 100$$

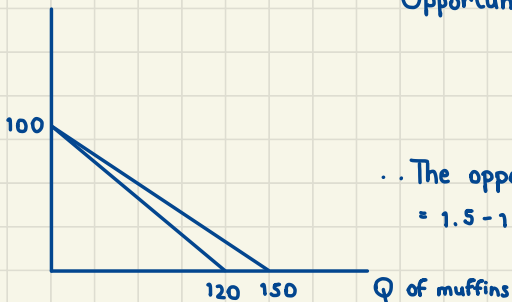
$$60 = -\frac{5}{6} Q_{\text{muf}} + 100$$

$$Q_{\text{muf}} = 40 \cdot \frac{6}{5} = 48$$

$\therefore$ It is not possible at
60 cupcakes and 50 muffins.

x)

Q of cupcakes

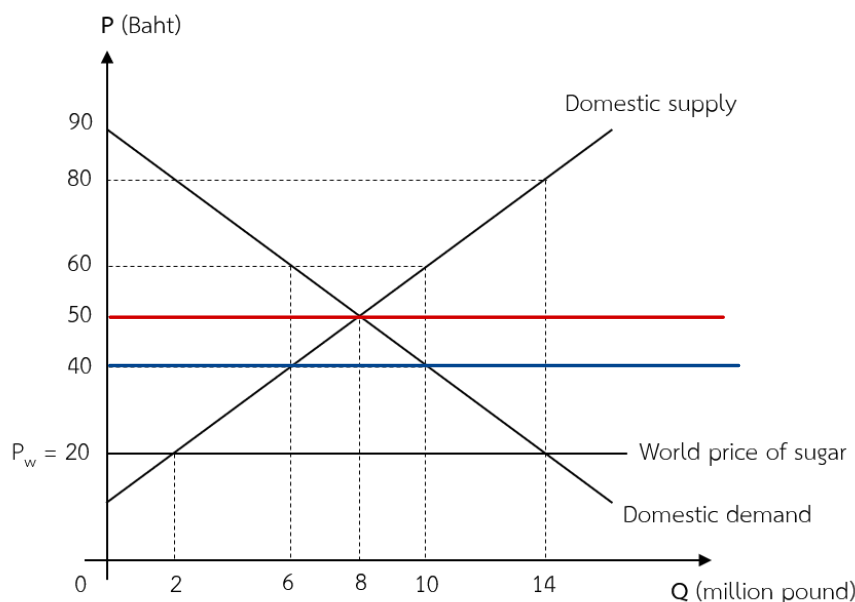


$$\text{Opportunity of each cupcake} = \frac{150}{100} \text{ muffins}$$

$$= 1.5 \text{ muffins}$$

$\therefore$ The opportunity cost increases by
 $= 1.5 - 1.2 = 0.3 \text{ unit}$

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?

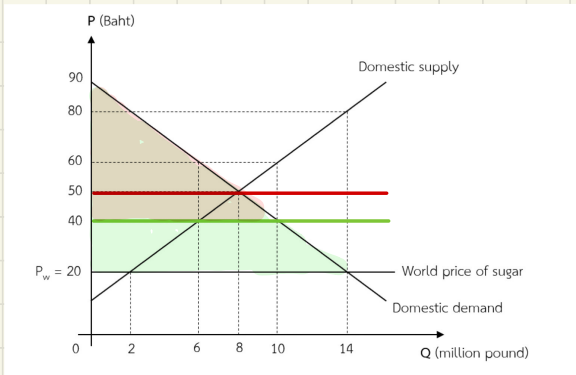
(d) After the import tax is imposed, compute the change in consumer surplus. Also highlight the change in consumer surplus in the provided graph. Are the domestic consumers better off or worse off? Clearly explain your answer.

(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.

② a) $14 - 2 = 12$ million pounds

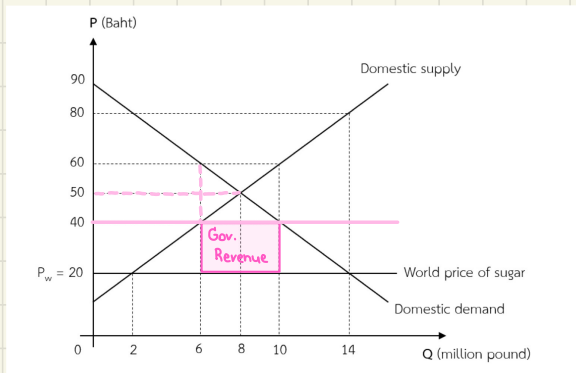
b, c) 6 million pounds

d)



Worse off because as you can see from the graph, the consumer surplus is decreased from green area to orange area. So, it can assume that some consumers can not afford the new price.

e)



∴ The government revenue is $4 \times 20 = 80$ millions

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.

$$\textcircled{3} \text{ a) } Q_1 = 5000, P_1 = 20, P_2 = 25, Q_2 = 3000$$

$$E_d = \frac{\Delta Q}{\Delta P} \times \frac{P_1}{Q_1} \\ = \frac{5000 - 3000}{20 - 25} \times \frac{25}{3000} = -3.33$$

b) Decrease because from a), PED is more than 1 so the price is elastic. It means when price increase a little, demand decrease a lot, the total revenue will be decreased as a result.

$$\text{c) } P_{1gt} = 20, P_{2gt} = 25 / Q_{1sd} = 2500, Q_{2sd} = 3000$$

$$PED = \frac{\frac{Q_2 - Q_1}{Q_1}}{\frac{P_2 - P_1}{P_1}} = \frac{\frac{3000 - 2500}{2500}}{\frac{25 - 20}{20}} = 0.8$$

d) Sweetened green tea and Super Drink are substitute. When the price of the first product increase price, the other products increase quantity demand.

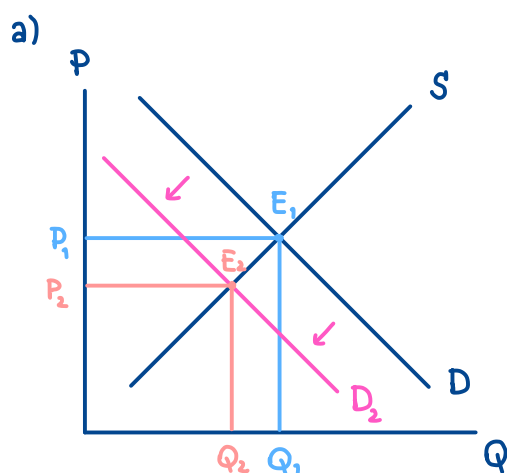
4. Consider a liquor market in a country, answer the following questions. If you have any specific assumption, please state them clearly within each item.

(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.

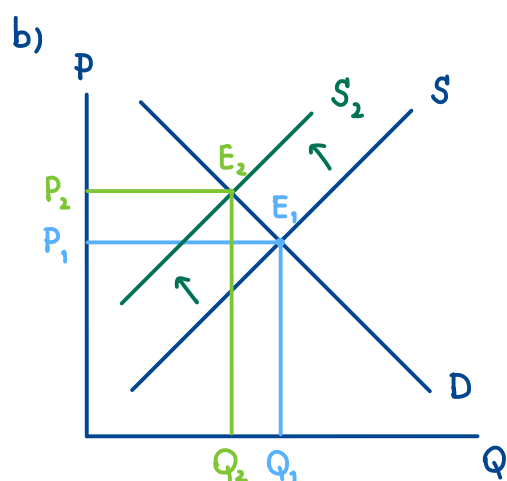
(b) If the government decides to collect unit tax on sellers, show that how would this affects equilibrium price and quantity. Provide a clear explanation with support of a diagram.

(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.

④

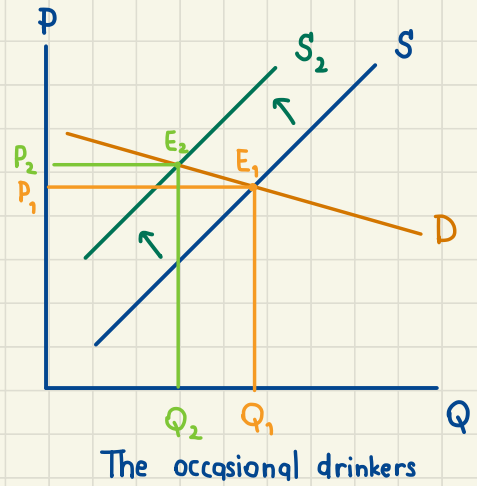
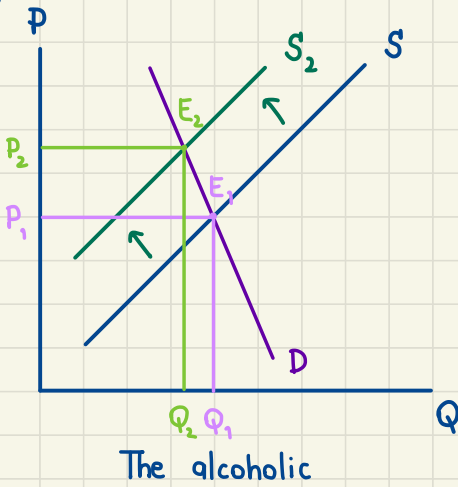


When Health Foundation put up the campaign, demand will shift left from D to D₂. It caused the change in price and quantity ($P_1 \rightarrow P_2$, Q_1, Q_2), leads to change in equilibrium from E₁ to E₂.



When the government collect unit tax on sellers, supply will shift from S to S₂ because the capital is increased. It will change in price (P_1 to P_2) and quantity (Q_1 to Q_2), equilibrium will change from E₁ to E₂ as a result.

c)



From the graph, it affects both group. The alcoholic needs to buy the product so the quantity change a little, it means the quantity of demand is inelastic because when price change, quantity change a little. In contrast, it is not necessary for the occasional drinkers so demand will be flat. This is because when price change a little, quantity decrease a lot which means the quantity of demand is elastic.