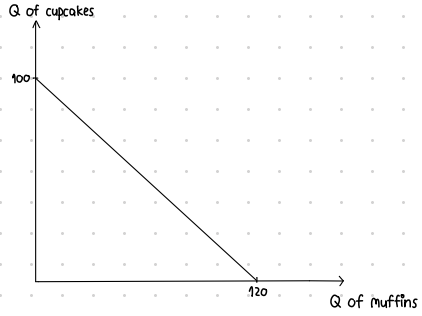
1. Suppose that a baker can produce muffins and cupcakes. If she uses all her resources on producing muffins, she can bake 120 (x) muffins. If she produces only cupcakes, she can bake 100 (y) cupcakes.

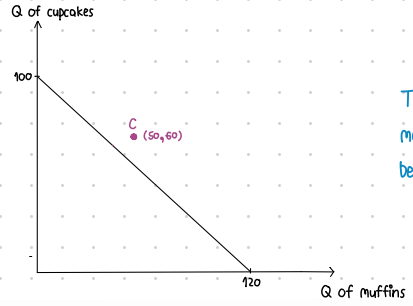
(a) Draw the Production Possibility Curve of this baker, where the x-axis represents the quantity of muffins and y-axis represents the quantity of cupcakes. Assume that the PPC is a straight line. What is the opportunity cost of each cupcake?



Opp. cost of each cupcake
= 1.2 muffins

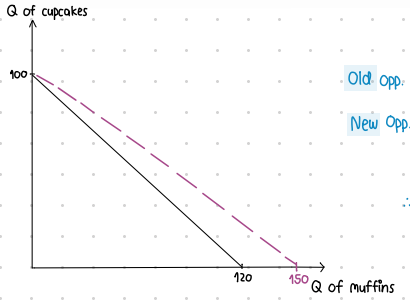
C	M
100	120
1	1.2

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



The baker available resources can't make 60 cupcakes & 50 muffins as it can be seen that point C is out of the PPC.

(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.



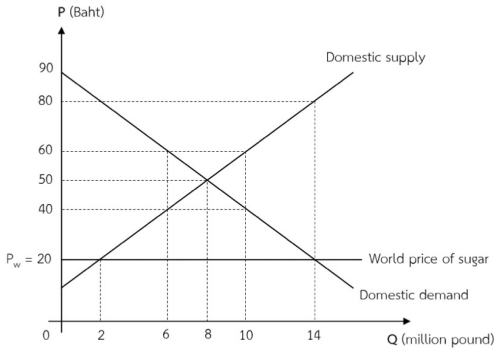
Old Opp. cost of each cupcake = 1.2 muffins
New Opp. cost of each cupcake = 1.5 muffins
+0.3

∴ Opp. cost of each cupcake increased by 0.3 muffins

C	M
100	150
1	1.5

C↑ 1 unit
M↑ 1.5 units

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?

12 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,

With the higher price, it encourages supplier to supply more

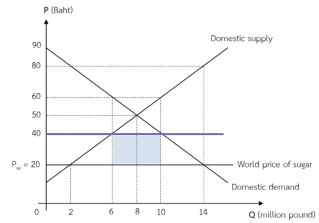
(c) How much of the sugar is domestically produced in Thailand after tax?

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 consumer is worse off b/c they have to buy sugar at higher price after the tax was imposed.

(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.



The shaded area represents the gov. rev. b/c there is only 6 million pound domestically and it needs 4 million pounds more from importing to meet the domestic demand.

- import tax = 20 ฿/pound

∴ gov. rev = 20 × 4 m pounds
= 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.

$$\varepsilon_d = \frac{P}{Q} \cdot \frac{\Delta Q}{\Delta P} = \frac{25}{3000} \cdot \frac{5000-3000}{20-25} = \frac{25}{3000} \cdot -\frac{2000}{5} = -\frac{10}{3} = -3.333$$

(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.

Total sale revenue of sweetened green tea will decrease b/c when $\varepsilon_d > 1$ means it's an elastic demand
∴ when the price increased, the total rev. go down

(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.

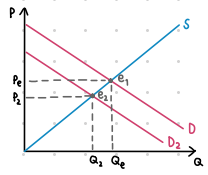
$$\varepsilon_c = \frac{\%\Delta Q_d{}^a}{\%\Delta P^b} = \frac{\frac{3000-2500}{2500}}{\frac{25-20}{20}} = \frac{4}{5} = 0.8$$

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

Sweetened green tea and super drink are substitute goods b/c when one product increases its price people will demand more the other goods, which is cheaper.

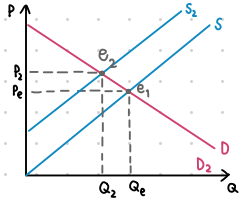
4. Consider a liquor market in a country, answer the following questions. If you have any specific assumption, please state them clearly within each item.

(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.



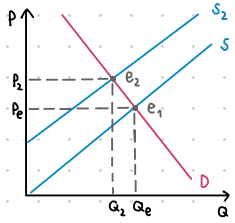
A campaign might affect the demand of the consumers to concern about their health, which makes the demand shifts left and decreases both price and quantity.

(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.



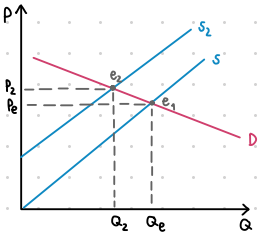
When the tax on sellers is increased, they will supply less b/c the higher cost of production. This makes the supply curve shifts to the left, contributing higher price and reducing the quantity from Q_e to Q_2.

(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.



Inelastic Demand

Alcoholic demands is inelastic b/c they consider alcohol as a necessary goods. The unit tax policy makes price goes up a lot, however the alcoholic still buy it anyway which makes quantity demand decrease a little.



Elastic Demand

Occasional drinkers demand is elastic b/c they don't consider alcohol as a necessary goods. When the unit tax policy makes the price of alcohol goes up, they just stop consume it and this makes quantity demand decreases a lot.