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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.

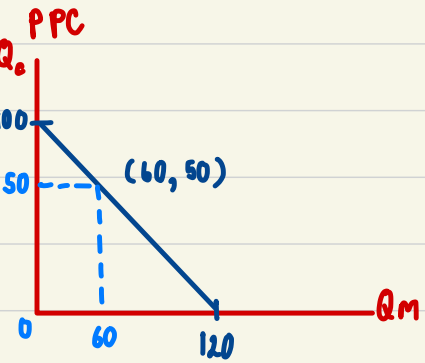
(a) Draw the Production Possibility Curve of this baker, where the x-axis represents the quantity of muffins and y-axis represents the quantity of cupcakes. Assume that the PPC is a straight line. What is the opportunity cost of each cupcake?

(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.

① (a.)

opportunity cost = $\frac{-\Delta y}{\Delta x}$



	cupcake	muffin
(0,120) → (50,60) :	+50	−60
	+1	−1.2

Ans The opportunity cost of each cupcake is loss of 1.2 muffins

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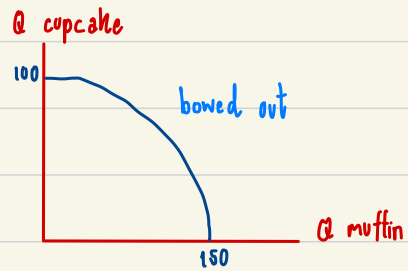
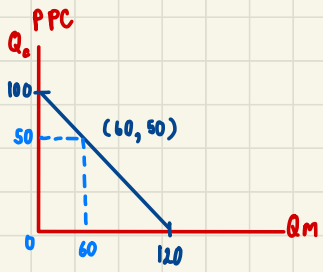
one cupcake is 1.2 muffins
kes. It would only leave
48 muffins. So it is
is current resources.



when the baker produce max.

① (a.)

opportunity cost = $\frac{-\Delta y}{\Delta X}$



	cupcake	muffin
(0,120) → (50,60) :	+50	−60
	+1	−1.2

Ans. The opportunity cost of each cupcake is loss of 1.2 muffins

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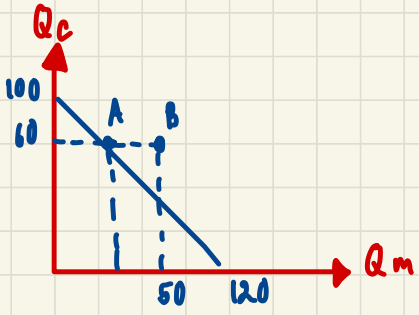
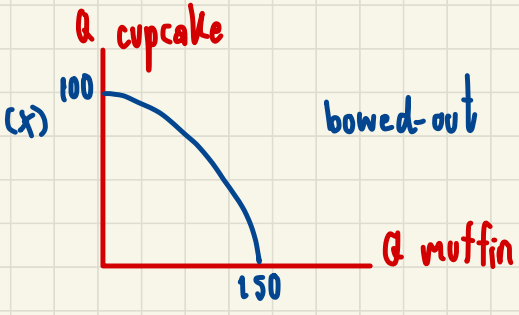
(b.) The opportunity of making one cupcake is 1.2 muffins If the baker make 60 cupcakes. It would only leave her enough resource to make 48 muffins. So it is impossible to achieve with this current resources.



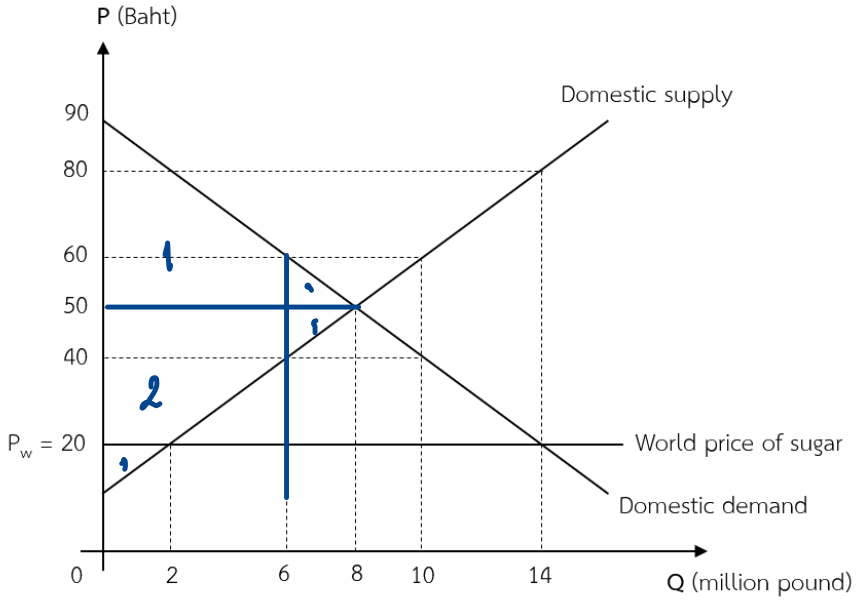
cupcakes	muffins
50 → 60	60 → 48
+10	−12



bowed-out

when the baker produce max. quantity of muffins to 150 The opportunity cost of each cupcake increasing from 1.2 to 1.5 It means factor of production of muffin and cupcake is imperfect substitutes.

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.

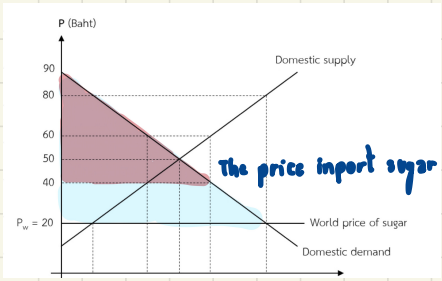
(2.) (a.)

According to the graph, when price of sugar is only 20 ฿ the domestic supply can supply only 2 million pounds 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.) After the unit tax policy is implemented. Price after tax is at 40 baht per pounds. Higher price encourage supplier to supply more.

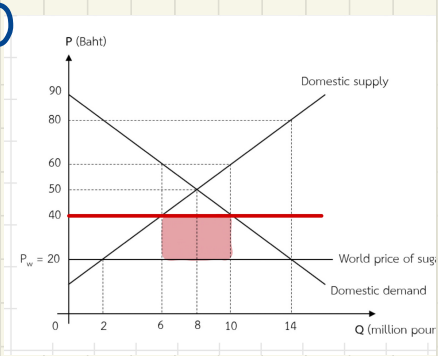
(c.) The sugar is domestically produced increases quantity supply supply from 2 million pounds to 6 million pounds.

(d.)



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

(c.)



To begin with, when price is 40฿, the domestic supplier can supply only 6 million pounds of sugar. However, at 40฿ price, the demand for 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. Finally, the government revenue is total taxation 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) Quantity demanded for green tea 5,000 bottles/month 20฿/1 bottle impose tax 5 ฿/bottle new price is 25 ฿ bottle. At new price Qd is 3000 bottles/months

(a.) point elasticity of demand $= \frac{P}{Q} \cdot \frac{Q_2 - Q_1}{P_2 - P_1}$

$= \frac{25}{3,000} \cdot \frac{5,000 - 3000}{20 \quad 25} = \frac{25}{3000} \cdot \frac{2000}{-5} = \frac{50}{-15} = \frac{-10}{3}$

(b.) The total revenue from selling sweetened green tea will decrease because the new price elasticity of demand is >1 It is an elastic demand so when the price goes up the total revenue will go down.

(c.) cross-price elasticity of demand for 'super drink'

$$E_c = \frac{P^b}{Q^a} \cdot \frac{Q_2^a - Q_1^a}{P_2^b - P_1^b} = \frac{20}{2500} \cdot \frac{3000 - 2500}{25 - 20} = \frac{2}{250} \cdot 100 = 0.8$$

(d.) Sweetend green tea & super drink are considered as substitute goods because when sweetened green tea price increase, people would buy super drink instead as it 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.

(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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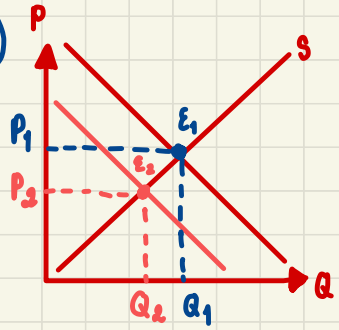
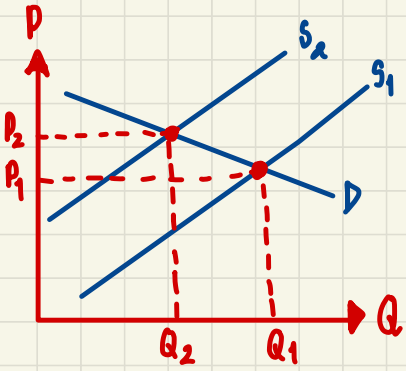
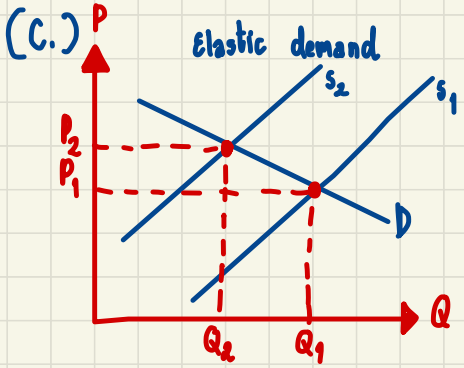


(a.) The campaign showing how bad can alcoholic beverages affect health. So, some people might drink less or stop drinking which will shift demand left. price decreas from P_1 to P_2. Q_d decreases from Q_1 to Q_2 the new market equilibrium is now at E_2



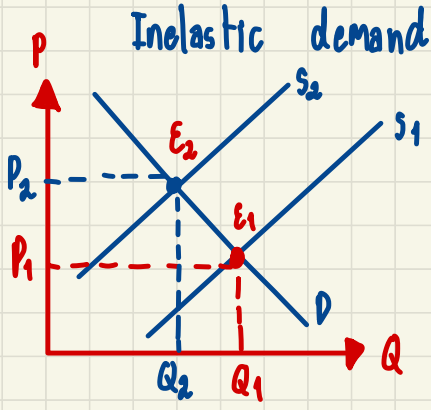
(b.) The govt. decides to collect unit tax on sellers. The cost of production would increase. supplier can supply less so It will shift the supply curve to the left. The price goes up from P_1 to P_2 higher price reduces the Q_d from Q_1 to Q_2 The new market equilibrium price and Q_d is now at E_2

(C.)



Occasional drinkers

If the consumers is a group of occasional drinkers the demand is going to be elastic because they don't consider acholic beverages as necessity goods. When the unit tax policy is implemented the price is increase but It doesn't effect on ocassional drinkers because they can just stop drinking. the graph shown the price increase a little while the quanity demand decrease a lot.



Alcoholic drinkers

If the consumers is a group of alcoholic drinkers. The demand is going to be inelastic because they consider alcoholic beverages as necessity goods when the unit tax policy. It causes the price increases but Alcoholic still going to purchase with little effect on Qd. the graph shown the price increase by a lot while the quantity demand decrease by a little.