Yothin

EE211 Assignment #1

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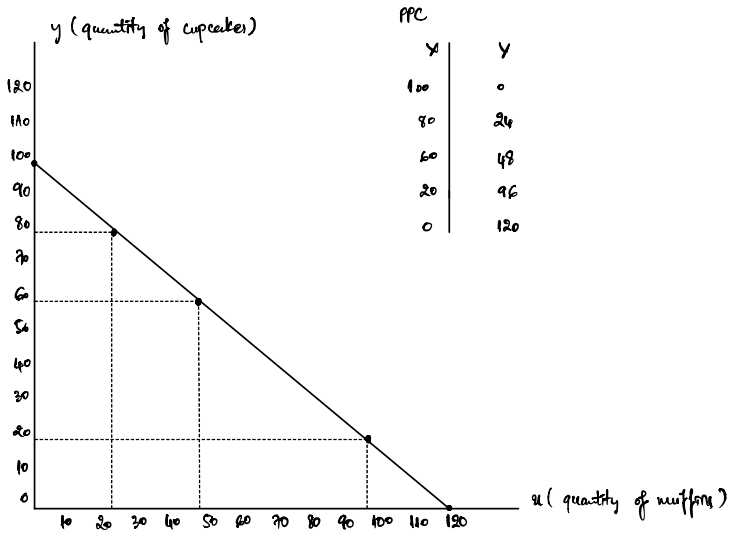
1. (a) Draw the production possibility curve

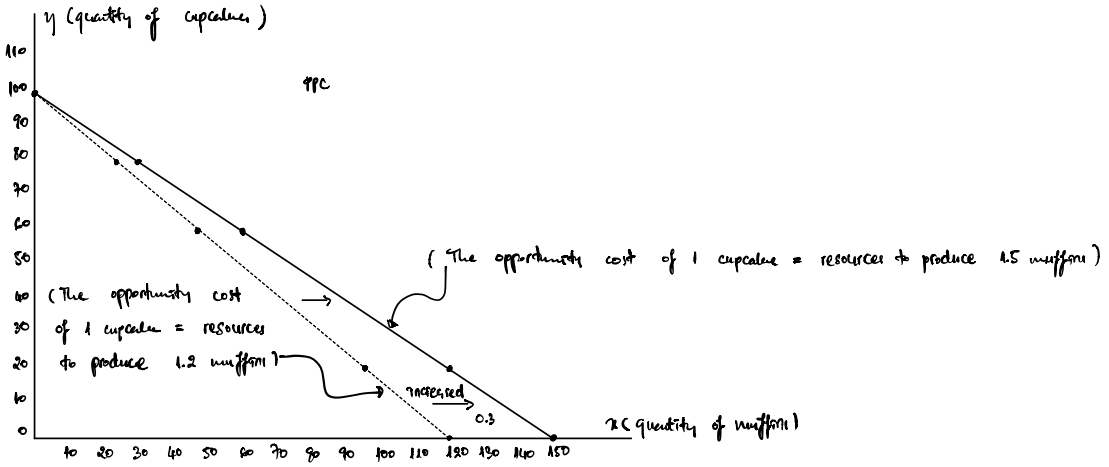


Assuming that PPC is a straight line.
⇒ The opportunity cost of each cupcake equals to the resources to produce 1.2 muffins.

(b)

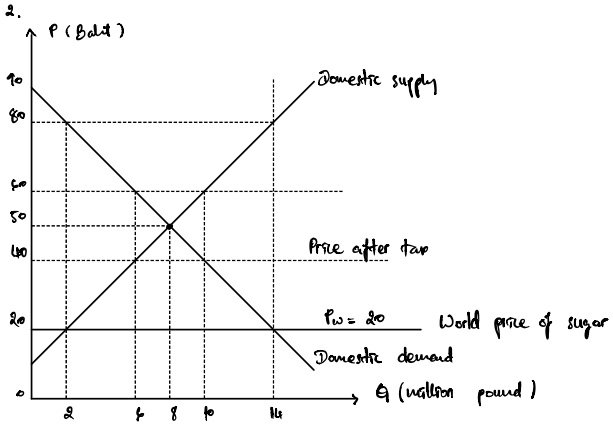
Assuming the baker made 60 cupcakes out of 100, remaining resources could produce $100 - 60 = 40$ cupcakes.
If the opportunity cost of each cupcake equals to the resources to produce 1.2 muffins
⇒ the opportunity cost of 40 cupcakes is the remaining resources to produce $1.2 \times 40 = 48$ muffins.
Therefore, this baker cannot make 60 cupcakes and 50 muffins with her available resources.

(X)



From the graph, the opportunity cost of each cupcake is the available resources to produce 1.5 muffins.
Hence, from (a) ⇒ the opportunity cost of each cupcake has increased by $1.5 - 1.2 = 0.3$.

2.



(a) Supposed that Thailand takes world price, the amount of sugar imported at world price level is 12 million pounds.
(b) The government further decides to collect an import unit tax of 20 Baht / pound and the after tax becomes 40 Baht / pound.
(c) The amount of sugar being produced domestically after tax is 10 million pounds.
(d)

Compute the change in consumer surplus after tax

$CS = WTP - P$ { Willingness to pay $WTP = 60$ Baht; $P = 40$ Baht

$\Rightarrow$ CS after tax $= 60 - 40 = 20$ Baht

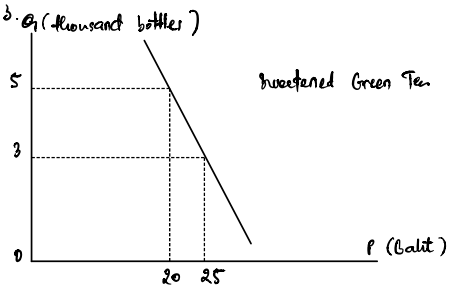
Consumer Surplus (CS)	Before tax	After tax	Change in consumer surplus ΔCS
$CS = WTP - P$	$50 - 20 = 30$	20 Baht	$20 - 30 = -10$

$\Rightarrow$ The domestic consumers are worse off.

(e) Compute the government revenue from the imported tax

$20 \times 10 = 200$ million Baht

3.



(a) Use point elasticity to calculate the price elasticity of demand at the new price

$$\varepsilon^D = \frac{\%\Delta Q}{\%\Delta P} = \frac{Q_2 - Q_1}{P_2 - P_1} \times \frac{P_1 + P_2}{Q_1 + Q_2}$$

{ $\Delta Q = 5000 - 3000 = 2000$ bottles
$\Delta P = 20 - 25 = -5$ Baht
$P_1 + P_2 = 25 + 20 = 45$ Baht
$Q_1 + Q_2 = 3000 + 5000 = 8000$ bottles

$$\Rightarrow \varepsilon^D = \frac{2000}{-5} \times \frac{45}{8000} = -2.25$$

(b) Using the concept of price elasticity of demand, the total sale revenue from selling sweetened green tea at Thammasat University would decrease because demand is price-elastic ($|\varepsilon = -2.25| > 1$).

(c) Calculate the cross-price elasticity of demand for "Super Drink"

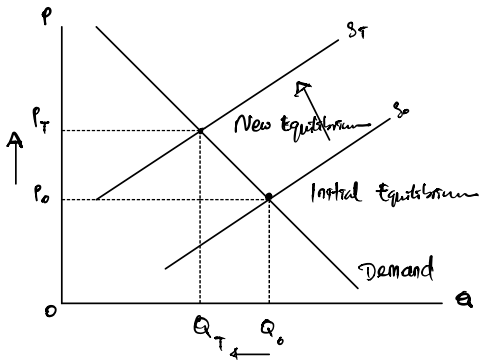
$$\varepsilon^D(\text{Super Drink}) = \frac{3000 - 2500}{-5} \times \frac{45}{3000 + 2500} = \frac{5}{-1} \times \frac{9}{55} = -0.81$$

Cross Elasticity of Demand for "Super Drink" $XE^D = \frac{-0.81}{-2.25} = 0.36$

(d) From part (c), $XE^D = 0.36 > 0$ indicates that sweetened green tea and "Super Drink" are substitutes.

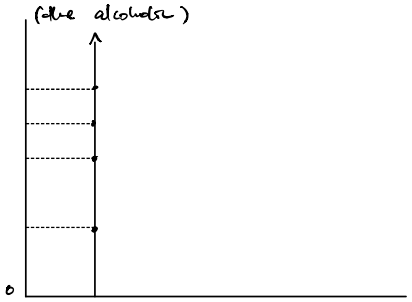
4. (a) If the Health Foundation employed the campaign, there will be a change in the market equilibrium due to a shift in demand.
As a matter of fact, people will start being more self-conscious of those big billboards on how badly alcohol can ruin their health, causing them to purchase the product less. The declining effect will gradually occurs. Meanwhile, the amount of supply remains the same as an only independent organization cannot leverage the producers' authority to produce.

(b) If the government decides to collect unit tax on sellers, there will be a change in equilibrium price and quantity due to a shift in demand. In this extent, there will be a decrease in the amount of commodity demanded.



⇒ Tax imposed on sellers, price increased $P_0 \rightarrow P_T$
⇒ Higher price, less products are being purchased, quantity of product sold decreased from $Q_0 \rightarrow Q_T$
⇒ Supply curve shifts left from $S_0 \rightarrow S_T$, marking a new equilibrium point.

(c)



The difference between the alcoholics and the occasional drinkers is that the alcoholics always drink regardless of the price change, so there's always an increase in their demand. Whereas, the occasional drinkers' demand curve remains steady. (they might not even notice the change in the alcohol market)