Exercise 1

1. You are considering the number of hamburgers that you plan to order. Based on the following table, complete the table and answer the following questions.
    a. How many units of hamburgers should you order? Why?
    b. Suppose you decide to order 2 hamburgers. Is this underallocation or overallocation? Explain. How much is your deadweight loss?
    c. Suppose you decide to order 5 hamburgers. Is this underallocation or overallocation? Explain. How much is your deadweight loss?

Quantity	Total Benefit	Marginal Benefit	Total Cost	Marginal Cost	Total Net Benefit
1st		80		20	
2nd		60		20	
3rd		40		20	
4th		20		20	
5th		0		20	

2. With diagrams, explain the differences between tariff and quota. Also, explain the impact on domestic stakeholders (consumers, producers, and government), i.e., who is better off and who is worse off? Why?
3. Consider an exporting country. Analyze welfare effect on all stakeholders when its government impose "Export Tax", i.e., per-unit tax imposed on the exported good. Draw a diagram(s) and provide complete analysis on who gain(s) and who lose(s).
4. A "small", open economy is engaging in international trade. Its domestic demand curve is given by $P = 100 - Q$ and its domestic supply curve is given by $P = Q$. The world price of the good is 20$. Answer the following questions.
    a. What does it mean for a country to be "small"? What implication of being "small" has on the world supply curve?
    b. Is this economy either an exporting or important country? Why? How many units of the goods is the country is currently importing or exporting?
    c. Now suppose the government decides to intervene. If the country is importing, the government will impose import tariff of 10$ per unit. If the country is exporting, the government will impose export subsidy of 10$ per unit. Calculate
        i. Domestic consumer and producer surplus after the intervention
        ii. Either subsidy cost or tariff revenue
        iii. Deadweight loss from the intervention.

1. You are considering the number of hamburgers that you plan to order. Based on the following table, complete the table and answer the following questions.

Quantity	Total Benefit	Marginal Benefit	Total Cost	Marginal Cost	Total Net Benefit
1st	80	80	20	20	60
2nd	140	60	40	20	100
3rd	180	40	60	20	120
4th	200	20	80	20	120
5th	200	0	100	20	100

a. How many units of hamburgers should you order? Why?

To maximize benefit, we should buy at marginal benefit equal marginal cost which is at 4th unit of hamburgers.

b. Suppose you decide to order 2 hamburgers. Is this underallocation or overallocation? Explain. How much is your deadweight loss?

It is underallocation because the marginal benefit of 2nd unit of hamburgers are more than marginal cost

We can calculate DWL by Total net benefit at an equilibrium minus total net benefit at 2nd unit of hamburger which is

120 - 100 = 20 #

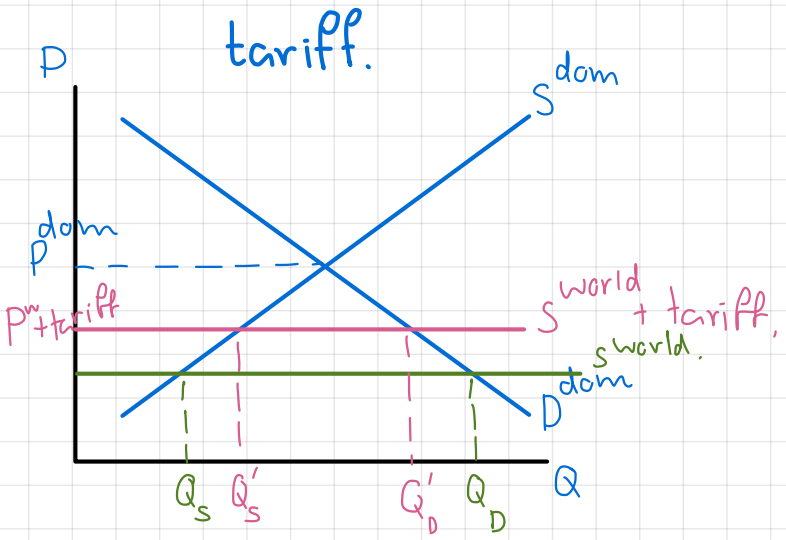
c. Suppose you decide to order 5 hamburgers. Is this underallocation or overallocation? Explain. How much is your deadweight loss?

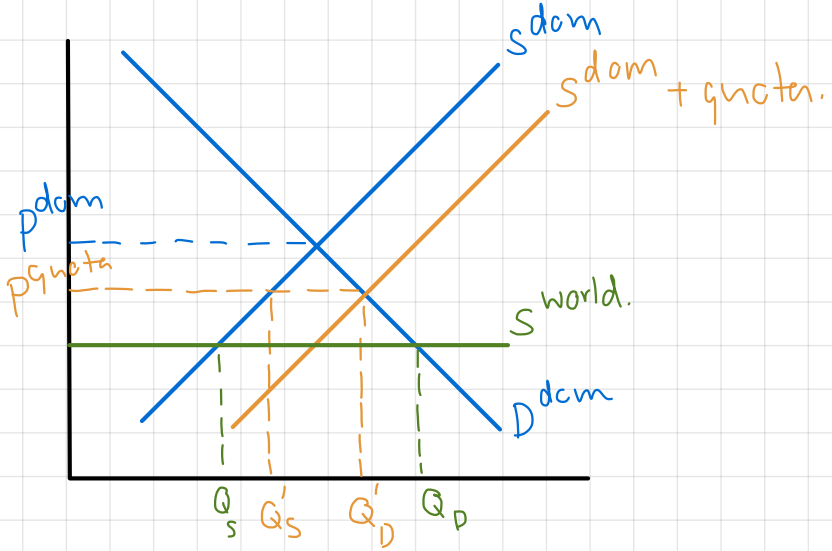
It is definitely overallocation as you consume more than your equilibrium point at 4th unit of hamburgers. As you can see in the table marginal benefit of 5th unit of hamburger are 0 but marginal cost still 20 same as earlier.

Same as (b) we can calculate DWL. by

$120 - 100 = 20$ ($MB^{equi} - MB^{5th}$)

2. With diagrams, explain the differences between tariff and quota. Also, explain the impact on domestic stakeholders (consumers, producers, and government), i.e., who is better off and who is worse off? Why?





Impact on domestic stake holders

Consumer: consumers are worse off in both case since they have to pay at higher price.

Producer: producers are better off in both case since they can sell at higher price.

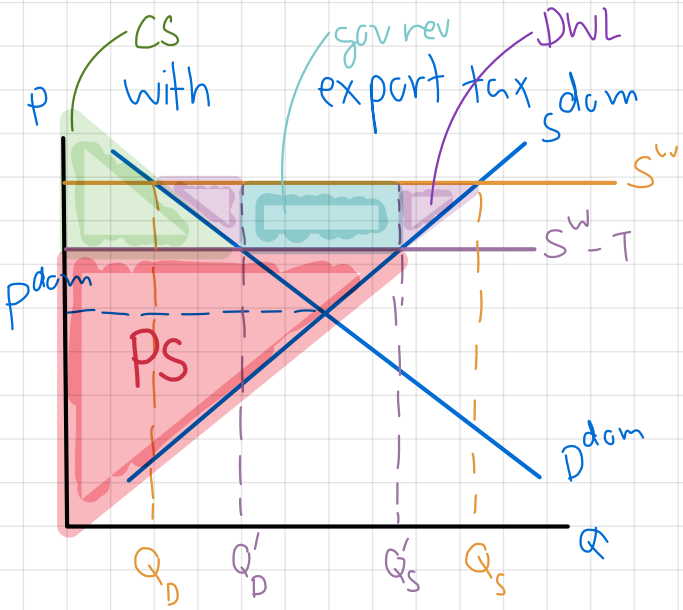
Government: for tariff, government will gain benefit from tariff. While quota, the license holders will gain benefit, but this amount will be counted as DWL if the holders are foreigners.

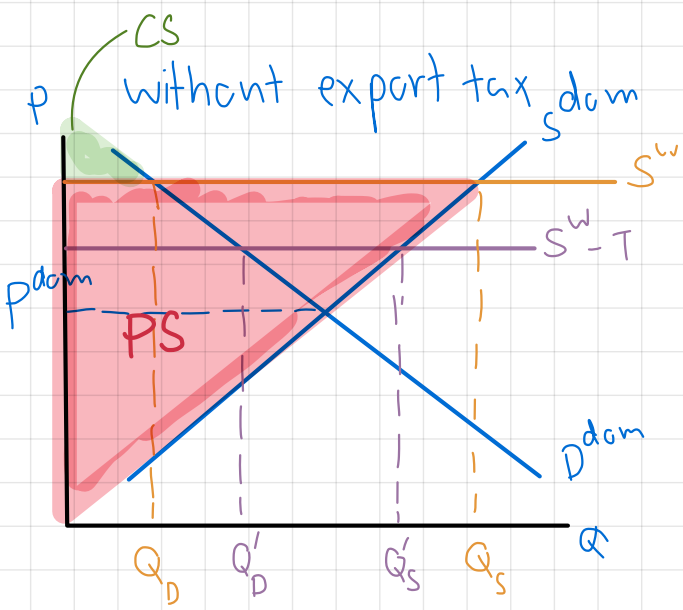
The difference between tariff & quota

- Quota shifts the supply curve, while tariff does not
- The owner of revenue from world price & the new price
  - tariff: government quota: license holders

Case when the license holders are foreign firm, those revenued will become DWL to society.

3. Consider an exporting country. Analyze welfare effect on all stakeholders when its government impose "Export Tax", i.e., per-unit tax imposed on the exported good. Draw a diagram(s) and provide complete analysis on who gain(s) and who lose(s).





Domestic consumers gain benefit, while domestic producers lose benefit.
Government gains benefit from tax revenue, but society is worse off due to DWL, loss to producers is larger than gains to consumer and government.

4. A "small", open economy is engaging in international trade. Its domestic demand curve is given by P = 100 – Q and its domestic supply curve is given by P = Q. The world price of the good is 20$. Answer the following questions.
   a. What does it mean for a country to be "small"? What implication of being "small" has on the world supply curve?

Being small country means that demand and supply of country does not affect the world. The world supply for small country is horizontal line since the world can supply the country as much as it needs.

b. Is this economy either an exporting or important country? Why? How many units of the goods is the country is currently importing or exporting?

$Q_d = 100 - P \quad Q_s = P \quad P^{world} = 20\$$

$\therefore Q_d > Q_s$ = importing country

domestic price : $Q_d = Q_s$

$100 - P = P$

$P^{dom} = 50$

The economy is an importing country since the country is not good at producing goods. The country is currently importing 60 units of goods.

c. Now suppose the government decides to intervene. If the country is importing, the government will impose import tariff of 10$ per unit. If the country is exporting, the government will impose export subsidy of 10$ per unit. Calculate
   i. Domestic consumer and producer surplus after the intervention
   ii. Either subsidy cost or tariff revenue
   iii. Deadweight loss from the intervention.

$P^{world} + tariff = 20\$ + 10\$ = 30\$$

(i) Domestic consumer surplus decreases, while there is a gain in domestic producer surplus.

$Q_d' = 100 - 30 = 70 \quad Q_s' = 30$

(ii) tariff revenue.

$Q_m' = Q_D' - Q_S' = 70 - 30 = 40$

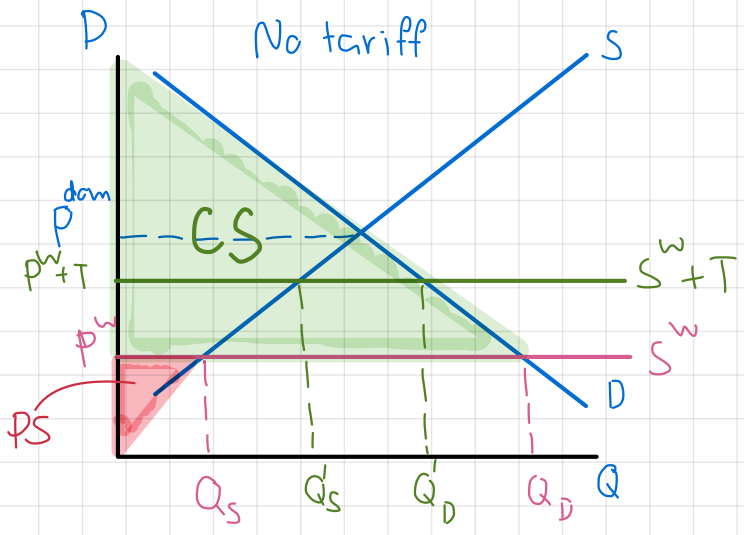
tariff revenue $= 40(10) = 400\$$

(iii) Dead weight loss.

$= \frac{1}{2} T [(Q_S' - Q_S) + (Q_D - Q_D')]$

$= \frac{1}{2} (10\$) [(30 - 20) + (80 - 70)]$

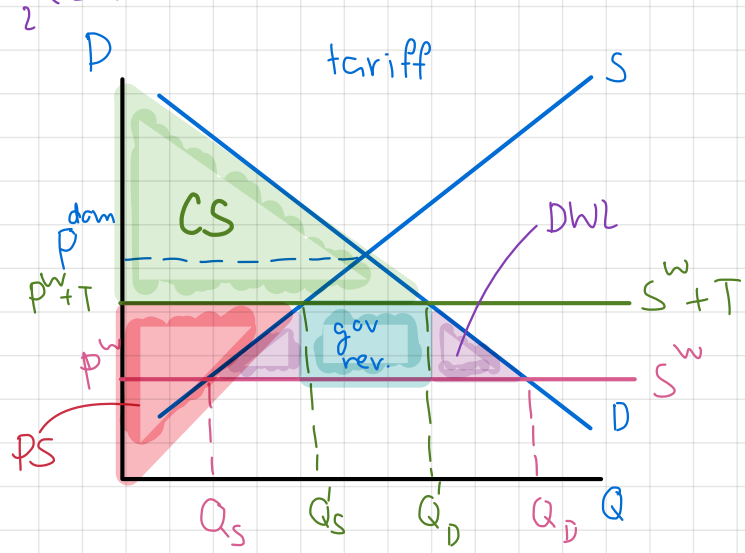
$= 100$ #



CS: $\frac{1}{2}(80)(100-20) = 3200$

PS: $\frac{1}{2}(20)(20) = 200$

} total surplus = 3400



CS: 2450 gov rev: 400

PS: 450 DWL : 100