

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?

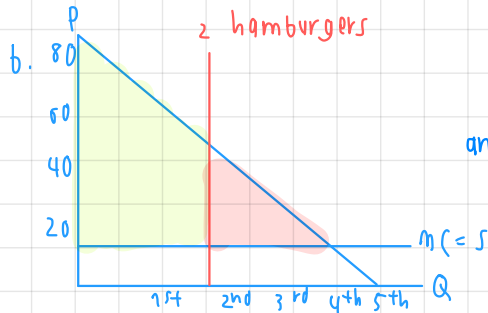
Quantity	Total Benefit	Marginal Benefit	Total Cost	Marginal Cost	Total Net Benefit
1 <sup>st</sup>	80	80	80	20	60
2 <sup>nd</sup>	140	60	100	20	100
3 <sup>rd</sup>	180	40	120	20	120
4 <sup>th</sup>	200	20	140	20	120
5 <sup>th</sup>	200	0	160	20	100

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.

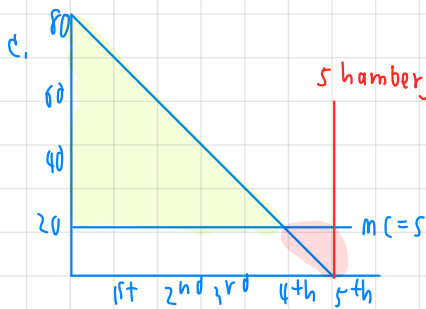
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- How many units of hamburgers should you order? Why?
- Suppose you decide to order 2 hamburgers. Is this underallocation or overallocation? Explain. How much is your deadweight loss?
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a. 4 units because marginal benefit must be greater or equal to marginal cost.



it's under allocation,  
and  $DWL = \frac{1}{2} \cdot 2 \cdot (60 - 20) = 40 \#$

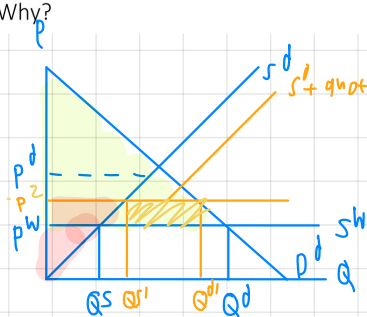
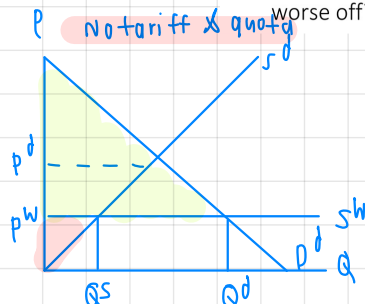


it's overallocation,  
and  $DWL$  is  $\frac{1}{2} \cdot 1 \cdot 20 = 10 \#$

Quantity	Total Benefit	Marginal Benefit	Total Cost	Marginal Cost	Total Net Benefit
1 <sup>st</sup>	80	80	80	20	60
2 <sup>nd</sup>	140	60	40	20	100
3 <sup>rd</sup>	180	40	60	20	120
4 <sup>th</sup>	200	20	80	20	120
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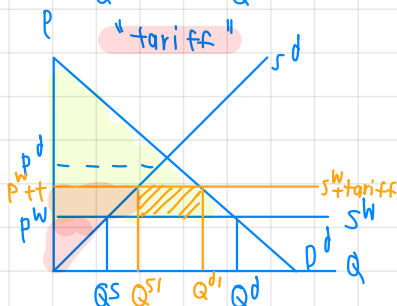
2. With diagrams, explain the differences between tariff and quota. Also, explain the impact on domestic stakeholders (consumers, producers, and government), i.e., who is better off and who is

worse off? Why?

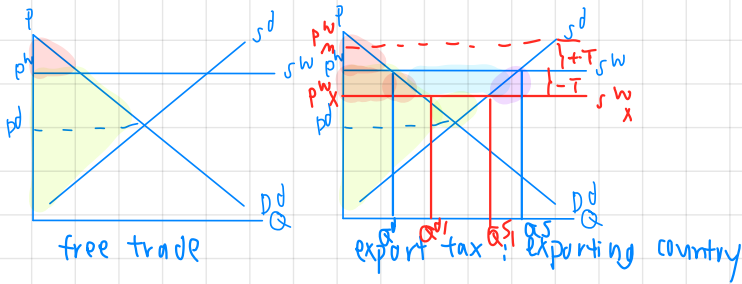


when tariff adds into the market,  $S^w$  shifts up because the world producers produce more. while adds into the market, it'll shift domestic price " $P^d$ " down to quota price " $P^z$ " but still higher than  $P^w$  that shift domestic supply " $S^d$ " to  $S^d + \text{quota}$ .  
the same thing are increasing in producer surplus (red area), decreasing in consumer surplus (green area) and creating DWL (orange area).

moreover, the similar thing is the revenue in DWL; tariff earned by government and quota earned by license holders.  
therefor, producers are better off, and consumers are worse off, government license holder



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).



∴ government will gain the benefit from tax revenue (export tax "T") and the consumers will gain the benefit from consuming in cheap price "P<sub>x</sub>", while the producers are losing benefit.

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?

a small open economy is a country which participates in the international trade have no effect on world economy (price and income), it's defined by the size of the working population which is less than the global median, and it shows gap between the large - small open economy.

- 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?

$$p^d: P = 100 - P; P = Q, Q^s = 20; P = Q$$

$$P = 50, Q^d = 100 - 20 = 80; P = 100 - Q$$

this country is importing country because the price domestic "P<sup>d</sup>" is higher than world price "P<sup>w</sup>" that the consumers prefer to consume the importing goods (low price), and the country imports  $80 - 20 = 60$  units #

- 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
- Domestic consumer and producer surplus after the intervention
  - Either subsidy cost or tariff revenue
  - Deadweight loss from the intervention.

i.)  $Q^s = 30; P = Q, Q^d = 100 - 30 = 70$

domestic consumer surplus (after tariff) =  $\frac{1}{2} \cdot 20 \cdot (100 - 30) = 2450$  \$

domestic producer surplus (after tariff) =  $\frac{1}{2} \cdot 30 \cdot 30 = 450$  \$

ii) tariff revenue =  $(30 - 20)(70 - 30) = 10 \cdot 40 = 400$  \$

iii) DWL (purple area) =  $\frac{1}{2} \cdot (30 - 20) \cdot (30 - 20) + \frac{1}{2} \cdot (80 - 70) \cdot (30 - 20)$

$$= 2 \cdot \frac{1}{2} \cdot 10 \cdot 10 = 100$$
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