EE211 Section 1
Homework 2 due on 19th September 2025 (Email: kaewkwanee211@gmail.com) Explain your answers with graph in details.

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Chapter 6

Problems and Applications # 2, 3 and 10

2. The government has decided that the free-market price of cheese is too low.

a) Suppose the government imposes a binding price floor in the cheese market. Draw a supply-and-demand diagram to show the effect of this policy on the price and quantity of cheese sold. Is there a shortage or surplus of cheese?

b) Producers of cheese complain that the price floor has reduced their total revenue. Is this possible? Explain.

c) In response to cheese producers' complaints, the government agrees to purchase all the surplus cheese at the price floor. Compared to the basic price floor, who benefits from this new policy? Who loses?

3. A recent study found that the demand-and-supply schedules for Frisbees are as follows:

Price per Frisbee	Quantity Demanded	Quantity Supplied
$11	1 million Frisbees	15 million Frisbees
10	2	12
9	4	9
8	6	6
7	8	3
6	10	1

a) What are the equilibrium price and quantity of Frisbees?

b) Frisbee manufacturers persuade the government that Frisbee production improves scientists' understanding of aerodynamics and is thus important for national security. A concerned Congress votes to impose a price floor $2 above the equilibrium price. What is the new market price? How many Frisbees are sold?

c) Irate college students march on Washington and demand a reduction in the price of Frisbees. An even more concerned Congress votes to repeal the price floor and impose a price ceiling $1 below the former price floor. What is the new market price? How many Frisbees are sold?

10. A market is described by the following supply and demand curves:

$$Q^S = 2P$$

$$Q^D = 300 - P$$

a) Solve for the equilibrium price and quantity.
b) If the government imposes a price ceiling of $90, does a shortage or surplus (or neither) develop? What are the price, quantity supplied, quantity demanded, and size of the shortage or surplus?
c) If the government imposes a price floor of $90, does a shortage or surplus (or neither) develop? What are the price, quantity supplied, quantity demanded, and size of the shortage or surplus?

Chapter 7

Problems and Applications # 4, 5 and 6

4) It is a hot day, and Bert is thirsty. Here is the value he places on each bottle of water:

Value of first bottle	$7
Value of second bottle	$5
Value of third bottle	$3
Value of fourth bottle	$1

a. From this information, derive Bert's demand schedule. Graph his demand curve for bottled water.
b. If the price of a bottle of water is $4, how many bottles does Bert buy? How much consumer surplus does Bert get from his purchases? Show Bert's consumer surplus in your graph.

c. If the price falls to $2, how does the quantity demanded change? How does Bert's consumer surplus change? Show these changes in your graph.

5) Ernie owns a water pump. Because pumping large amounts of water is harder than pumping small amounts, the cost of producing a bottle of water rises as he pumps more. Here is the cost he incurs to produce each bottle of water:

Cost of first bottle	$1
Cost of second bottle	$3
Cost of third bottle	$5
Cost of fourth bottle	$7

a. From this information, derive Ernie's supply schedule. Graph his supply curve for bottled water.
b. If the price of a bottle of water is $4, how many bottles does Ernie produce and sell? How much producer surplus does Ernie get from these sales? Show Ernie's producer surplus in your graph.

c. If the price rises to $6, how does the quantity supplied change? How does Ernie's producer surplus change? Show these changes in your graph.

6. Consider a market in which Bert from problem 4 is the buyer and Ernie from problem 5 is the seller.

a. Use Ernie's supply schedule and Bert's demand schedule to find the quantity supplied and quantity demanded at prices of $2, $4, and $6. Which of these prices brings supply and demand into equilibrium?

b. What are consumer surplus, producer surplus, and total surplus in this equilibrium?

c. If Ernie produced and Bert consumed one fewer bottle of water, what would happen to total surplus?

d. If Ernie produced and Bert consumed one additional bottle of water, what would happen to total surplus?

Chapter 8

Problems and Applications # 1, 5 and 10

1. The market for pizza is characterized by a downward-sloping demand curve and an upward-sloping supply curve.

a. Draw the competitive market equilibrium. Label the price, quantity, consumer surplus, and producer surplus. Is there any deadweight loss? Explain.

b. Suppose that the government requires each pizzeria to pay a $1 tax on each pizza sold. Illustrate the effect of this tax on the pizza market, being sure to label consumer surplus,

producer surplus, government revenue, and deadweight loss. How does each area compare to the pre-tax case?

c. If the tax were removed, pizza eaters and sellers would be better off, but the government would lose tax revenue. Suppose that consumers and producers voluntarily transferred some of their gains to the government. Could all parties (including the government) be better off than they were with a tax? Explain using the labeled areas in your graph.

5. After economics class, your friend suggests that taxing food would be a good way to raise revenue because the demand for food is quite inelastic. In what sense is taxing food a "good" way to raise revenue? In what sense is it not a "good" way to raise revenue?

10. Suppose that a market is described by the following supply and demand equations:

$$\boldsymbol{Q^S = 2P}$$

$$\boldsymbol{Q^D = 300 - P}$$

a. Solve for the equilibrium price and the equilibrium quantity.

b. Suppose that a tax of T is placed on buyers, so the new demand equation is:

$$\boldsymbol{Q^D = 300 - (P + T)}$$

Solve for the new equilibrium. What happens to the price received by sellers, the price paid by buyers, and the quantity sold?

c. Tax revenue is T × Q. Use your answer from part (b) to solve for tax revenue as a function of T. Graph this relationship for T between 0 and 300.

d. The deadweight loss of a tax is the area of the triangle between the supply and demand curves. Recalling that the area of a triangle is ½ × base × height, solve for deadweight loss as a function of T. Graph this relationship for T between 0 and 300. (Hint: If you look sideways, the base of the deadweight loss triangle is T, and the height is the difference between the quantity sold with the tax and the quantity sold without the tax.)

e. The government now levies a tax of $200 per unit on this good. Is this a good policy? Why or why not? Can you propose a better policy?

Chapter 22

Problems and Applications # 4 and 5

4. Raj consumes only cheese and crackers.

   a. Could cheese and crackers both be inferior goods for Raj? Explain.
   b. Suppose that cheese is a normal good for Raj and crackers are an inferior good. If the price of cheese falls, what happens to Raj's consumption of crackers? What happens to his consumption of cheese? Explain.

5. Darius buys only milk and cookies.

   a. In year 1, Darius earns $100, milk costs $2 per quart, and cookies cost $4 per dozen. Draw Darius's budget constraint.

   b. Now suppose that all prices increase by 10 percent in year 2 and that Darius's salary increases by 10 percent as well. Draw Darius's new budget constraint. How would Darius's optimal bundle of milk and cookies in year 2 compare with his optimal bundle in year 1?