EE211 Section 1
Homework 2 Answers
Explain your answers with graph in details.

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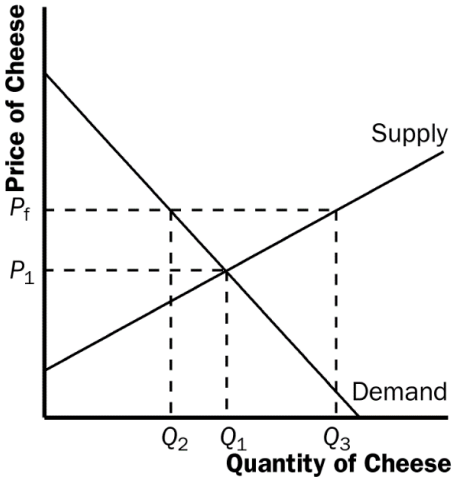
Chapter 6
Problems and Applications # 2 and 10

2.
a.



The imposition of a binding price floor in the cheese market is shown in figure. In the absence of the price floor, the price would be P1 and the quantity would be Q1. With the floor set at Pf, which is greater than P1, the quantity demanded is Q2, while quantity supplied is Q3, so there is a surplus of cheese in the amount Q3 – Q2.

b. The producers' complaint that their total revenue has declined is correct if demand is elastic. With elastic demand, the percentage decline in quantity would exceed the percentage rise in price, so total revenue would decline.
c. If the government purchases all the surplus cheese at the price floor, producers benefit and taxpayers lose. Producers would produce quantity Q3 of cheese, and their total revenue would increase substantially. However, consumers would buy only quantity Q2 of cheese, so they are in the same position as before. Taxpayers lose because they would be financing the purchase of the surplus cheese through higher taxes.

10.
a. Solve for the equilibrium price and quantity by setting the quantity supplied equal to the quantity demanded: 2P = 300 – P; 3P = 300; P = $100. When the equilibrium price is $100, the equilibrium quantity is 2(100) = 200.
b. If the government imposes a price ceiling of $90, a shortage develops. The ceiling is below the equilibrium price so it is a binding price ceiling. At the ceiling price of $90, the quantity supplied

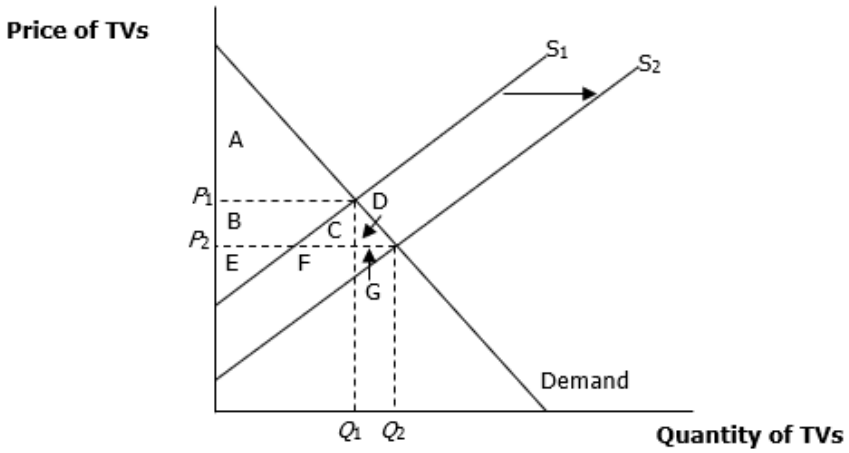
is 2(90) = 180 units and the quantity demanded is 300 – 90 = 210 units. Consumers want to buy 30 more units than producers want to sell at the price ceiling.

c. If the government imposes a price floor of $90, neither a shortage nor a surplus develops. The floor is lower than the equilibrium price so it is not a binding price floor. With a price floor of $90, the equilibrium price of $100 will prevail. The quantity supplied and demanded will be the equilibrium quantity of 200 units.

d. If the government levies a $30 tax on producers, neither a shortage nor a surplus develops, but the quantity exchanged is smaller than without the tax. Using the new supply curve, 2(P-30) = 300 – P; 2P-60 = 300 – P; 3P = 360; P = $120 and Q= 300-120=180. The price buyers pay is $120. Producers retain $90 per unit after submitting the $30 tax. The quantity demanded and supplied is 180 units.

Chapter 7
Problems and Applications # 7

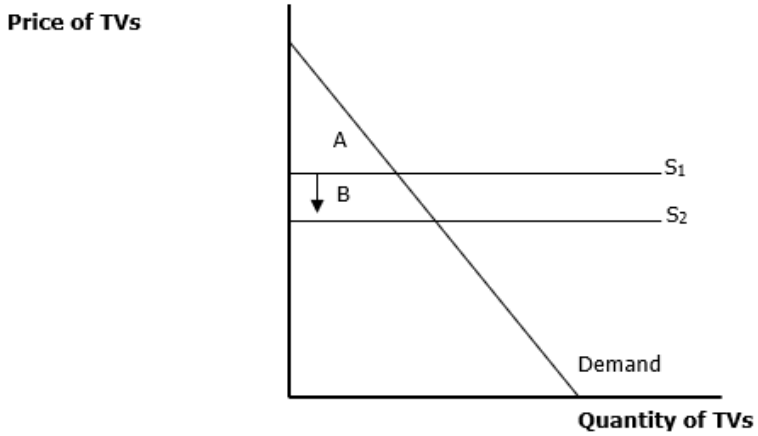
a.



The effect of falling production costs in the market for TVs results in a shift to the right in the supply curve. As a result, the equilibrium price of TVs declines and the equilibrium quantity increases.

b. The decline in the price of TVs increases consumer surplus from area A to A + B + C + D, an increase in the amount B + C + D. Prior to the shift in supply, producer surplus was areas B + E (the area above the supply curve and below the price). After the shift in supply, producer surplus is areas E + F + G. So producer surplus changes by the amount F + G – B, which may be positive or negative. The increase in quantity increases producer surplus, while the decline in the price reduces producer surplus. Because consumer surplus rises by B + C + D and producer surplus rises by F + G – B, total surplus rises by C + D + F + G.

c.



If the supply of TVs is very elastic, then the shift of the supply curve benefits consumers most. To take the most dramatic case, suppose the supply curve were horizontal. Then there is no producer surplus at all. Consumers capture all the benefits of falling production costs, with consumer surplus rising from area A to area A + B.

Chapter 8

Problems and Applications # 1 and 3

1.

a.

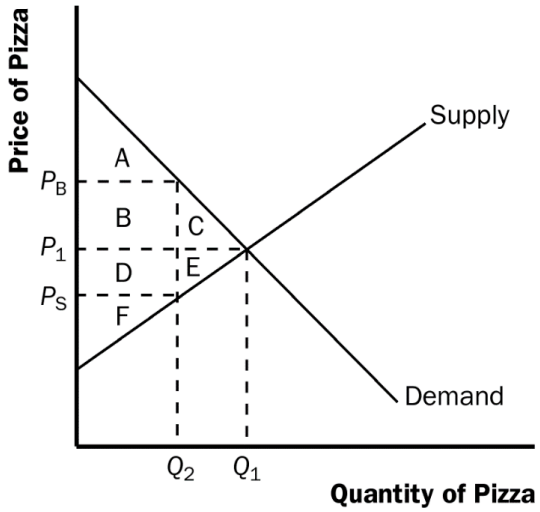


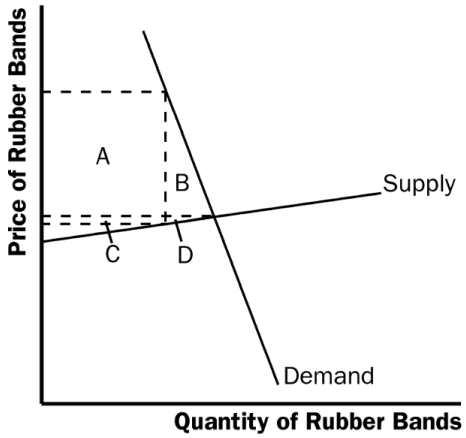
Figure illustrates the market for pizza. The equilibrium price is P_1, the equilibrium quantity is Q_1, consumer surplus is area A + B + C, and producer surplus is area D + E + F. There is no deadweight loss, as all the potential gains from trade are realized; total surplus is the entire area between the demand and supply curves: A + B + C + D + E + F.

b. With a $1 tax on each pizza sold, the price paid by buyers, PB, is now higher than the price received by sellers, PS, where PB = PS + $1. The quantity declines to Q2, consumer surplus is area A, producer surplus is area F, government revenue is area B + D, and deadweight loss is area C + E. Consumer surplus declines by B + C, producer surplus declines by D + E, government revenue increases by B + D, and deadweight loss increases by C + E.

c. If the tax were removed and consumers and producers voluntarily transferred B + D to the government to make up for the lost tax revenue, then everyone would be better off than without the tax. The equilibrium quantity would be Q1, as in the case without the tax, and the equilibrium price would be P1. Consumer surplus would be A + C, because consumers get surplus of A + B + C, then voluntarily transfer B to the government. Producer surplus would be E + F, because producers get surplus of D + E + F, then voluntarily transfer D to the government. Both consumers and producers are better off than the case when the tax was imposed. If consumers and producers gave a little bit more than B + D to the government, then all three parties, including the government, would be better off. This illustrates the inefficiency of taxation.

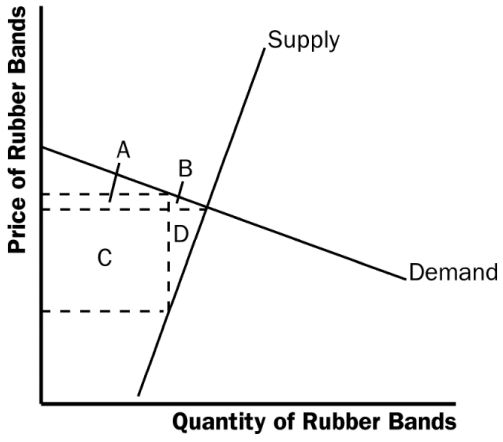
3.

a.



With very elastic supply and very inelastic demand, the burden of the tax on rubber bands will be borne largely by buyers. As figure shows, consumer surplus declines considerably, by area A + B, but producer surplus decreases only by area C+D.

b.



With very inelastic supply and very elastic demand, the burden of the tax on rubber bands will be borne largely by sellers. As figure shows, consumer surplus does not decline much, just by area A + B, while producer surplus falls substantially, by area C + D. Compared to part (a), producers bear much more of the burden of the tax, and consumers bear much less.

Chapter 22
Problems and Applications # 1 and 3
1
a.

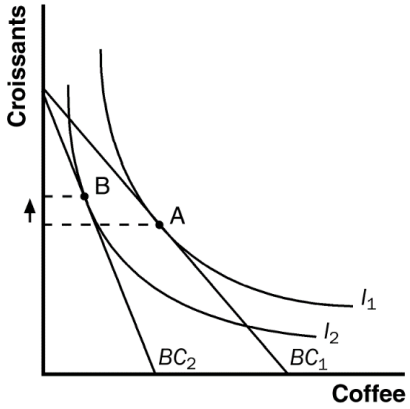
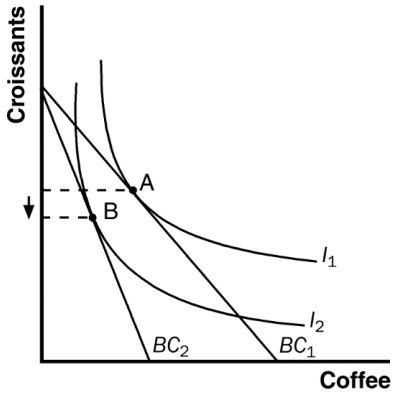


Figure shows the effect of the frost on Maya's budget constraint. Because the price of coffee rises, her budget constraint rotates from BC1 to BC2

b. If the substitution effect outweighs the income effect for croissants, Maya buys more croissants and less coffee. They moves from point A to point B.
c.



If the income effect outweighs the substitution effect for croissants, Maya buys fewer croissants and less coffee, moving from point A to point B.

3.
a.

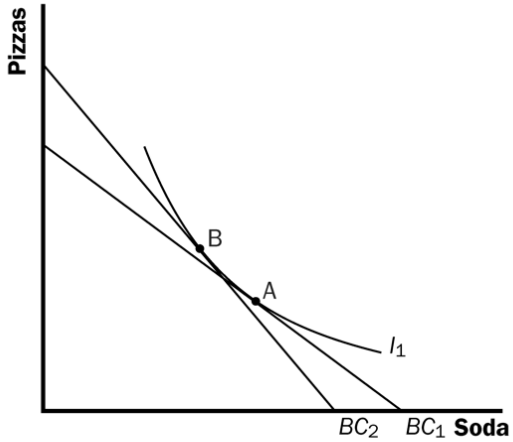


Figure shows the effects of these price changes. If you are equally happy, you will remain on the same indifference curve. However, both the increase in the price of soda and the decline in the price of pizza make the budget constraint steeper.

b. You will consume less soda and more pizza. Since you remain equally happy, there is only the substitution effect to consider.

c. You can no longer afford your initial bundle. It lies outside of your new budget constraint.