Answers to Problem Set 5

Chapter 6

3. a. The equilibrium price of Frisbees is $8 and the equilibrium quantity is 6 million Frisbees.

   b. With a price floor of $10, the new market price is $10 since the price floor is binding. At that price, only 2 million Frisbees are sold, since that’s the quantity demanded.

   c. If there’s a price ceiling of $9, it has no effect, since the market equilibrium price is $8, below the ceiling. So the equilibrium price is $8 and the equilibrium quantity is 6 million Frisbees.

4. a. Figure 4 shows the market for beer without the tax. The equilibrium price is $P_1$ and the equilibrium quantity is $Q_1$. The price paid by consumers is the same as the price received by producers.

   ![Figure 4](image-url)
b. When the tax is imposed, it drives a wedge of $2 between supply and demand, as shown in Figure 5. The price paid by consumers is $P_2$, while the price received by producers is $P_2 - $2. The quantity of beer sold declines to $Q_2$.

6. If the government imposes a $500 tax on luxury cars, the price paid by consumers will rise less than $500, in general. The burden of any tax is shared by both producers and consumers—the price paid by consumers rises and the price received by producers falls, with the difference between the two equal to the amount of the tax. The only exceptions would be if the supply curve were perfectly elastic or the demand curve were perfectly inelastic, in which case consumers would bear the full burden of the tax and the price paid by consumers would rise by exactly $500.

8. a. Figure 8 shows the effects of the minimum wage. In the absence of the minimum wage, the market wage would be $w_1$ and $Q_1$ workers would be employed. With the minimum wage ($w_m$) imposed above $w_1$, the market wage is $w_m$, the number of employed workers is $Q_2$, and the number of workers who are unemployed is $Q_3 - Q_2$. Total wage payments to workers are shown as the area of rectangle ABCD, which equals $w_m$ times $Q_2$. 
b. An increase in the minimum wage would decrease employment. The size of the effect on employment depends only on the elasticity of demand. The elasticity of supply doesn’t matter, because there’s a surplus of labor.

c. The increase in the minimum wage would increase unemployment. The size of the rise in unemployment depends on both the elasticities of supply and demand. The elasticity of demand determines the quantity of labor demanded, the elasticity of supply determines the quantity of labor supplied, and the difference between the quantity supplied and demanded of labor is the amount of unemployment.

d. If the demand for unskilled labor were inelastic, the rise in the minimum wage would increase total wage payments to unskilled labor. With inelastic demand, the percentage decline in employment would be less than the percentage increase in the wage, so total wage payments increase. However, if the demand for unskilled labor were elastic, total wage payments would decline, since then the percentage decline in employment would exceed the percentage increase in the wage.