**Economics 301**  
**Spring 2008**  
**Problem set # 1: answers**

Name: __________________________________________

1. Perloff (fourth edition): question 20 page 44  
The world price is determined by the intersection of the demand curve and the world supply curve that is the sum of U.S. and Chinese supply. By subsidizing the U.S. growers at a higher price \( p^* \), it increases the quantity supplied by U.S. farmers. Because of the increased supply in the world market, prices fall. Chinese growers are made worse off by the U.S. policy, selling smaller quantities at lower prices.

Because the temperature enters the supply function with a positive constant, increases in temperature will shift the supply curve rightward, increasing the equilibrium quantity at each price. To calculate the change in price at equilibrium, solve the equations simultaneously for price. As temperature rises, price would fall according to  
\[ p = \frac{a - c - ft}{b + e}. \]

3.  
1. The demand curve shifts to the right.  
2. The demand curve shifts to the left.  
3. The demand curve shifts to the right.  
4. The demand curve shifts to the right.  
5. The demand curve shifts to the left.

4. Set \( Q_D = Q_S \) and solve. \( 60 - p = -50 + p \), and thus \( p^* = $55 \) and \( Q^* = 5 \) units. (+ graph)

5. Set \( Q_D = Q_S \) and solve.  
   - For \( Q_D = 100 - 5p, 100 - 5p = 20 + 3p \), and thus \( p^* = 10 \), and \( Q^* = 50 \) units. (+ graph)  
   - For \( Q_D = 80 - 5p, 60 - 5p = 20 + 3p \), and thus \( p^* = 5 \), and \( Q^* = 35 \) units.(+ graph)

6. The equilibrium solution with no government intervention is \( 20,000 - 2,200W = 4,000 + 1,800W \), and thus \( W^* = $4 \) per hour and \( Q^* = 11,200 \) workers are employed. When the minimum wage is imposed at $5 per hour, no wage lower than 5 can be offered. Thus, the supply becomes higher than the demand at \( W = 5 \). The new equilibrium wage is $5 and employment is determined by the demand curve at this wage, \( Q = 20000 - 2200 \times 5 = 9,000 < 11,200 \). Less workers will be employed.