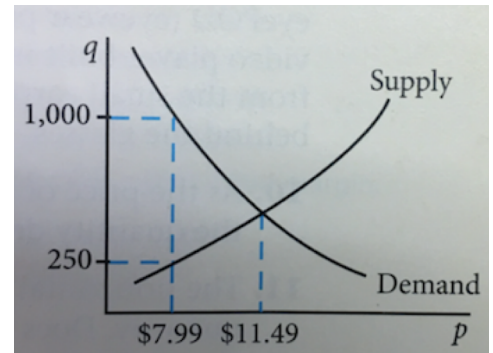# Final Exam Review – Unit 4

Name: _____   Date: _____

1. The graph below shows supply and demand curves for the newest game controller for a video game system.

   a) What is the equilibrium price?

   b) Describe what happens at this equilibrium price.

   c) What will happen if the price is set at $7.99?

   d) How many game controllers are supplied at a price of $7.99?

   e) What will happen if the price is set at $12.99?

2. The demand function for a certain product is $q = -300p + 10,000$. The fixed expenses are $500,000 and the variable expenses are $2 per item produced.

   a) What is the expense function?

   b) If the price is set at $20, what quantity will be demanded?

   c) If $q = 1,000$ widgets, find E, the cost (expense) of producing them.

3. At a particular company, the monthly expense equation is $E = 50q + 40$. Its products will be sold to retailers at a wholesale price of $60 each. How many items must be sold to reach the breakeven point?

4. Let the expense function for a particular item be $E = -19.50p + 530$. Let the revenue function be $R = -4.5p^2 + 100p$. Use the quadratic formula to determine the breakeven points.

$$x = \frac{-b \pm \sqrt{b^2 - (4ac)}}{2a}$$

5. Determine the expense E for a production if $E = 82q + 850$, $p = \$32$, and $q = 24p + 705$.