Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Chapter 3 Review**

**Solve each system by substitution or elimination.**

1. y = 2x + 8 **2.** –x + y = 2

y = 3x - 1 2x + y = -1

**Solve each system of inequalities by graphing.**

**3.**  **4.** 

**Solve each system of equations using matrices.**

**5.** 5x + 4y – z = 1 **6.** x + 2y = 0

2x – 2y + z = 1 4x – z = 4

-x – y + z = 2 5y + z = -1

**Solve each system by graphing.**

**7.** y = 7 - x **8.** x – y = -1

x + 3y = 7 2x + 2y = 10

**Write a matrix to represent the situation and use matrices to solve.**

**9**. Your school sells tickets for its winter concert. Student tickets are $5 and adult tickets are $10. If your school sells 85 tickets and makes $600, how many of each ticket did they sell?

**10.** The Back-to-Basics Ice Cream Company makes two flavors of ice cream, vanilla and chocolate. Each day the company can make up to 1,000 quarts of ice cream. The sales department can sell up to 800 quarts of vanilla and up to 600 quarts of chocolate.

1. Write a system of inequalities representing the constraints on the number of quarts of vanilla and chocolate ice cream that the company can manufacture and sell.
2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
5. Graph the constraints and shade the feasible region.
6. The Back-to-Basics profit is 10 cents per quart of vanilla and 13 cents per quart of chocolate.
7. Write an objective statement for the profit.
8. Find the number of quarts of each kind of ice cream for the maximum daily profit. Explain or show your work.