Algebra II Practice Test

Unit 4: Systems of Equations

Name _____

Date _____

1. Solve the system: $2x - y = 4$
$4x + 5y = 8$

2. Solve the system: $2x - 3y = -6$
$y = 3x - 5$

3. Solve the system: $x + 3y = 5$
$6y + z = 12$
$x - 2z = -10$

4. Solve for x: $\begin{vmatrix} x^2 & 2 \\ x & 1 \end{vmatrix} = 8$

5. Expand across the first row:

$$\begin{vmatrix} 1 & 3 & -2 \\ 2 & 0 & 1 \\ 4 & -1 & 1 \end{vmatrix}$$

6. Use Cramer's rule to solve:
$2x - 3y = 4$
$4x + 5y = 3$

7. Use Cramer's rule to solve for y:
$x + y + z = 6$
$2x - y + z = 3$
$x + 2y - 3z = -4$

8. A coin collection consists of 14 coins with a total value of $1.35. If the coins are nickels, dimes, and quarters and the number of nickels is three less than twice the number of dimes, how many of each coin is there in the collection?

9. Graph the solution to the system:
$x + y < 5$
$x + y = 3$

10. Graph the solution set for the system:
$y \le -\frac{1}{2}x + 4$
$x \ge 0$
$y \ge 0$