Name _____ Date _____

Practice C
For use with the lesson "Solve Systems with Quadratic Equations"

Solve the system of equations.

1. $2x^2 + y = -8$
$y = -9x - 1$

2. $5y = 10x^2$
$x^2 + 4 = -12$

3. $4x^2 = 6 + y$
$y = x^2 + 2x - 1$

Find the points of intersection of the graph of the system of equations.

4. $x^2 + y^2 = 4$
$x = y - 2$

5. $y + 3x = 8x^2$
$2x^2 - 5y = -4x$

6. $5x^2 + 2x + 3y = 33$
$y + x^2 = 7$

Solve the equation using a system.

7. $x^2 + 2x - 4 = 6 - x$

8. $-0.4x^2 - 7.6 = 4x + 2$

9. $2^x = x^2 - 1$

10. Chloe tells Nathan that the graphs of the equations, $y + x^2 = 6x$ and $y = x^3 + 2x - 4$, have three points of intersection. Is Chloe correct? If so, give the points of intersection.

11. **Skating** Ju, Ashanti, and Avery are skating in a park. Ju follows a path that is modeled by $y = x^2 + 1$. Ashanti follows a path that is modeled by $y = 2x + 1$. Avery follows a path that is modeled by $2x^3 + 1$.

    a. Do the paths of Ju and Ashanti intersect? If so, what are the coordinates of the point(s) where their paths intersect?

    b. Do the paths of Ashanti and Avery intersect? If so, what are the coordinates of the point(s) where their paths intersect?

    c. Do the paths of Ju and Avery intersect? If so, what are the coordinates of the point(s) where their paths intersect?

    d. What are the coordinates of the point where the paths of Ju, Ashanti, and Avery intersect?