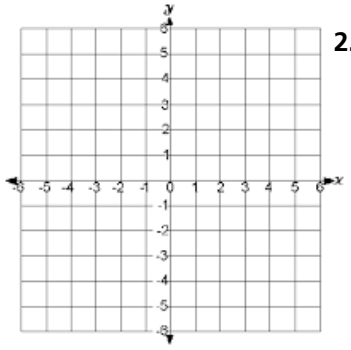
Name _____ Class _____ Date _____

Practice: Section 3-10 WS /29 *Form G*

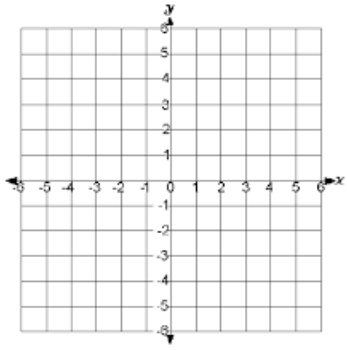
Systems of Linear and Quadratic Equations

Solve each system by graphing.

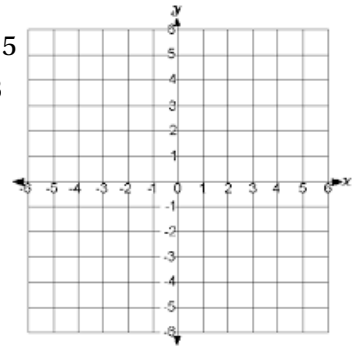
1. $y = x^2 + 2$
$y = x + 2$



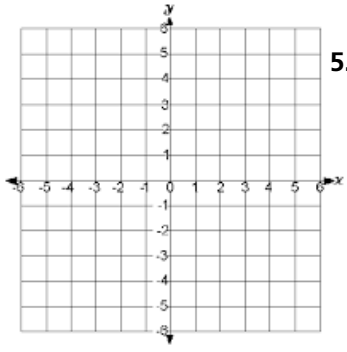
2. $y = x^2$
$y = 2x$



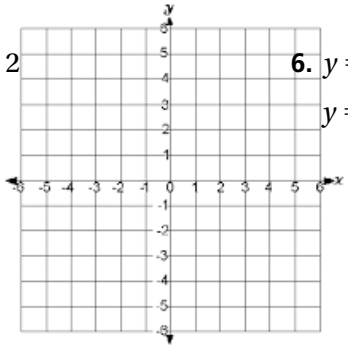
3. $y = x^2 - 5$
$y = x - 3$



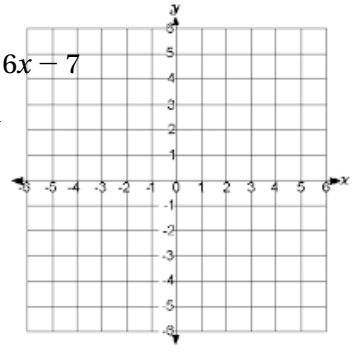
4. $y = x^2 + 1$
$y = x + 1$



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



6. $y = x^2 - 6x - 7$
$y = x + 1$



Solve each system using elimination.

7. $y = x^2$
$y = x + 2$

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

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

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

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

12. $y = x^2 - x - 6$
$y = 2x - 2$

13. The weekly profits of two different companies selling similar items that opened for business at the same time are modeled by the equations shown below. The profit is represented by y and the number of weeks the companies have been in business is represented by x. According to the projections, what week(s) did the companies have the same profit? What was the profit of both companies during the week(s) of equal profit?
Company A: $y = x^2 - 70x + 3341$
Company X: $y = 50x + 65$

14. The populations of two different cities are modeled by the equations shown below. The population (in thousands) is represented by y and the number of years since 1970 is represented by x. What year(s) did the cities have the same population? What was the population of both cities during the year(s) of equal population?
Baskinville: $y = x^2 - 22x + 350$
Cryersport: $y = 55x - 950$

Name _____ Class _____ Date _____

Practice (continued) *Form G*

Systems of Linear and Quadratic Equations

Solve each system using substitution.

15. $y = x^2 + x - 60$
$y = 2x - 4$

16. $y = x^2 - 3x + 7$
$y = 4x - 3$

17. $y = x^2 - 2x - 5$
$y = x - 5$

18. $y = -x^2 - 2x - 4$
$7x + y = 2$

19. $y = x^2 + 6x$
$x - y = 4$

20. $y = x^2 + 4x - 15$
$y - 25 = x$

Solve each system using a graphing calculator.

21. $y = x^2 + 5x + 13$
$y = -5x + 3$

22. $y = x^2 - x + 82$
$y = -2x + 50$

23. $y = x^2 - 12x + 150$
$y = 15x - 20$

24. $y = x^2 - 2x + 2.5$
$y = 2x - 1.25$

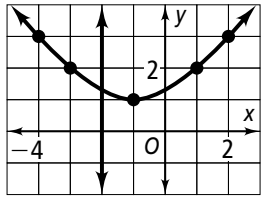
25. $y = x^2 - 0.9x - 1$
$y = 0.5x + 0.76$

26. $y = x^2 - 68$
$y = -5x + 25.75$

27. Reasoning What are the solutions of the system $y = 2x^2 - 11$ and $y = x^2 + 2x - 8$? Explain how you solved the system.

28. Writing Explain why a system of linear and quadratic equations can only have 0, 1, or two possible solutions.

29. Reasoning The graph at the right shows a quadratic function and the linear function $x = b$.



a. How many solutions does this system have?

b. If the linear function were changed to $y = b$, how many solutions would the system have?

c. If the linear function were changed to $y = b + 3$, how many solutions would the system have?