EXERCISES

State whether each system is *consistent and independent, consistent and dependent,* or *inconsistent.*

11. $x + 3y = 18$
$-x + 2y = 7$

12. $y = 0.5x$
$2y = x + 4$

13. $-35x + 40y = 55$
$7x = 8y - 11$

Solve each system of equations by graphing.

14. $x = 5$
$4x + 5y = 20$

15. $y = -3$
$2x = 8$

16. $x + y = -2$
$3x - y = 10$

17. $x + 3y = 0$
$2x + 6y = 5$

18. $y = x - 2$
$x - 2y = 4$

19. $3x - 2y = -6$
$x = 12 - 4y$

20. Determine what type of solution you would expect from the system of equations $3x - 8y = 10$ and $16x - 32y = 75$ without graphing the system. Explain how you determined your answer.

Solve each system of equations algebraically.

21. $5x - y = 16$
$2x + 3y = 3$

22. $3x - 5y = -8$
$x + 2y = 1$

23. $y = 6 - x$
$x = 4.5 + y$

24. $2x + 3y = 3$
$12x - 15y = -4$

25. $-3x + 10y = 5$
$2x + 7y = 24$

26. $x = 2y - 8$
$2x - y = -7$

27. $2x + 5y = 4$
$3x + 6y = 5$

28. $\frac{3}{5}x - \frac{1}{6}y = 1$
$\frac{1}{5}x + \frac{5}{6}y = 11$

29. $4x + 5y = -8$
$3x - 7y = 10$

30. Find the solution to the system of equations $3x - y = -9$ and $4x - 2y = -8$.

31. Explain which method seems most efficient to solve the system of equations $a - b = 0$ and $3a + 2b = -15$. Then solve the system.

32. **Sports** Spartan Stadium at San Jose State University in California has a seating capacity of about 30,000. A newspaper article states that the Spartans get four times as many tickets as the visiting team. Suppose S represents the number of tickets for the Spartans and V represents the number of tickets for the visiting team's fans.

a. Which system could be used by a newspaper reader to determine how many tickets each team gets?

A $4S + 4V = 30{,}000$
$S = 4V$

B $S - 4V = 0$
$S + V = 30{,}000$

C $S + V = 30{,}000$
$V - 4S = 0$

b. Solve the system to find how many tickets each team gets.