Solving One-Step Equations (ALG.EQ.01)

Solve each equation. Write the name of the property used for each step.

1. $p + 6 = 14$

2. $x - 9 = 12$

3. $-3 = m + 7$

4. $\frac{1}{3} = 2 + n$

5. $3y = 27$

6. $\frac{x}{4} = -2$

7. $\frac{3}{2}k = -9$

8. $40 = 0.08t$

Write and solve an equation for each sentence.

9. A number increased by sixteen is seven.

10. Negative six is equal to the difference of a number and twelve.

11. Six-fifths of a number is negative eighteen.

12. The sum of nine and a number is negative three.

13. A number less five is eight.

14. Negative seven multiplied by a number is 42.

15. The quotient of a number and fifteen is three-fifths.

For each word problem, define a variable, then write and solve an equation.

16. The school band is trying to raise $6,400 for a trip. So far, they have raised $3,750. How much do they still need to raise?

17. Ronald is buying a car. He plans to put down $2,400 and get a loan for the remaining amount. Find the amount of the loan if the car Ronald wants to purchase is $7,200.

18. Sam is hoping to complete his set of baseball cards. There are 660 cards in the set and he currently has 495. How many cards does he need to complete the set?

19. Joanne earns $8.25 per hour at her job. Last week she made $132. How many hours did Joanne work last week?

20. Phyllis had chocolate truffles that she wanted to divide evenly between her 7 friends. If each friend received 12 chocolates, then how many truffles did Phyllis have?

21. Maria was at an Internet café and paid $3.60 for the time she spent online. The café charges 8¢ for each minute online. What was the total time Maria spent online?

Solve each equation.

22. $x - 17 = -8$

23. $y + 13 = 5$

24. $\frac{n}{-4} = -8$

25. $j + 1350 = 872$

26. $-14 = 2p$

27. $-\frac{1}{4} + n = \frac{1}{4}$

28. $-3m = 21$

29. $\frac{3}{4} = -\frac{6}{5} + b$

30. $\frac{3}{14}x = -6$

31. $1\frac{2}{5} + m = -2\frac{3}{10}$

32. $-1\frac{4}{5}a = 2\frac{7}{10}$

33. $2.5 + y = -1.3$

34. $\frac{d}{0.05} = 0.3$

35. $-0.07 = -0.14 + n$

36. $-8 = n + (-3)$

37. $\frac{5}{8}m = -\frac{1}{6}$

38. $-\frac{5}{2}x = -\frac{3}{4}$

39. $-0.09k = 8.1$

40. Use the equation $\mathbf{10}\boldsymbol{y} = \mathbf{5}\boldsymbol{x}$ to answer each part.

a. If $x = 6$, then determine the value of y.

b. If $y = -2$, then determine the value of x.

c. If $y = 4$, then determine the value of $3x - 2y$.

d. If $x = -2$, then determine the value of $4y - 2x$.

41. Use the equation $-\frac{\mathbf{3}}{\mathbf{4}}\boldsymbol{x} = \mathbf{6}\boldsymbol{y}$ to answer each part.

a. If $x = -20$, then determine the value of y.

b. If $y = \frac{1}{2}$, then determine the value of x.

c. If $x = \frac{10}{3}$, then determine the value of $\frac{x}{4} + 2y$.

d. If $y = -8$, then determine the value of $\frac{x}{2y}$.