

Practice 2-1

Solving One-Step Equations

Solve each equation. Check your answer.

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|-------------------------|-------------------------------------|----------------------|
| 1. $g - 6 = 2$ | 2. $15 + b = 4$ | 3. $8 = h + 24$ |
| 4. $63 = 7x$ | 5. $x + 7 = 17$ | 6. $-2n = -46$ |
| 7. $\frac{c}{14} = -3$ | 8. $\frac{x}{2} = 13$ | 9. $\frac{a}{5} = 3$ |
| 10. $r - 63 = -37$ | 11. $5 + d = 27$ | 12. $2b = -16$ |
| 13. $4y = 48$ | 14. $c - 25 = 19$ | 15. $a + 4 = 9.6$ |
| 16. $x + 29 = 13$ | 17. $-3d = -63$ | 18. $3f = -21.6$ |
| 19. $-\frac{x}{8} = 12$ | 20. $a - \frac{1}{3} = \frac{2}{3}$ | 21. $n - 3 = -3$ |

Write an equation to model each situation. Then solve.

22. A stack of 12 bricks is 27 in. high. What is the height of each brick?
23. The sum of Juanita's age and Sara's age is 33 yr. If Sara is 15 years old, how old is Juanita?
24. The tallest player on the basketball team is $77\frac{3}{4}$ in. tall. This is $9\frac{1}{2}$ in. taller than the shortest player. How tall is the shortest player?
25. The equatorial diameter of Jupiter is about 89,000 mi. This is about 11.23 times the equatorial diameter of Earth. What is the equatorial diameter of Earth? Round to the nearest integer.
26. The distance from Baltimore to New York is about 171 mi. This is about 189 mi less than the distance from Baltimore to Boston. How far is Baltimore from Boston if you stop in New York along the way?

Solve each equation. Check your answer.

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|-------------------------------------|--------------------------------------|----------------------------|
| 27. $y - 8 = -15$ | 28. $a + 27.7 = -36.6$ | 29. $3x = 27$ |
| 30. $a + 5 = -19$ | 31. $m - 9.5 = -27.4$ | 32. $-54 = -6s$ |
| 33. $x + \frac{1}{3} = \frac{5}{6}$ | 34. $-\frac{s}{3} = 7$ | 35. $\frac{m}{12} = -4.2$ |
| 36. $\frac{a}{3} = -11$ | 37. $-\frac{z}{8} = -3.7$ | 38. $-\frac{y}{11} = -6.1$ |
| 39. $-17.5 = 2.5d$ | 40. $b - 48 = -29$ | 41. $96 = -3h$ |
| 42. $-4.2x = 15.96$ | 43. $x + 87.8 = 38.1$ | 44. $-5x = 85$ |
| 45. $-\frac{x}{5} = 4.8$ | 46. $d + \frac{2}{3} = -\frac{1}{2}$ | 47. $-\frac{t}{2} = -9$ |
| 48. $45.6 = 6x$ | 49. $19.5 = -39.5 + f$ | 50. $m - 21 = -43$ |

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Practice 2-2

Solving Two-Step Equations

Solve each equation. Check your answer.

1. $5a + 2 = 7$

2. $2x + 3 = 7$

3. $3b + 6 = 12$

4. $9 = 5 + 4t$

5. $4a + 1 = 13$

6. $-t + 2 = 12$

Write an equation to model each situation. Then solve.

7. You want to buy a bouquet of yellow roses and baby's breath for \$16. The baby's breath costs \$3.50 per bunch, and the roses cost \$2.50 each. You want one bunch of baby's breath and some roses for your bouquet. How many roses can you buy?

8. Suppose you walk at the rate of 210 ft/min. You need to walk 10,000 ft. How many more minutes will it take you to finish if you have already walked 550 ft?

9. Suppose you have shelled 6.5 lb of pecans, and you can shell pecans at a rate of 1.5 lb per hour. How many more hours will it take you to shell a total of 11 lb of pecans?

10. To mail a first class letter, the U.S. Postal Service charges \$.34 for the first ounce and \$.21 for each additional ounce. It costs \$1.18 to mail your letter. How many ounces does your letter weigh?

11. Suppose you want to buy one pair of pants and several pairs of socks. The pants cost \$24.95, and the socks are \$5.95 per pair. How many pairs of socks can you buy if you have \$50.00 to spend?

Solve each equation. Check your answer.

12. $5.8n + 3.7 = 29.8$

13. $67 = -3y + 16$

14. $-d + 7 = 3$

15. $\frac{m}{9} + 7 = 3$

16. $6.78 + 5.2x = -36.9$

17. $5z + 9 = -21$

18. $3x - 7 = 35$

19. $36.9 = 3.7b - 14.9$

20. $4s - 13 = 51$

21. $9f + 16 = 70$

22. $11.6 + 3a = -16.9$

23. $-9 = -\frac{h}{12} + 5$

24. $-c + 2 = 5$

25. $-67 = -8n + 5$

26. $22 = 7 - 3a$

27. $\frac{k}{3} - 19 = -26$

28. $-21 = \frac{n}{3} + 2$

29. $3x + 5.7 = 15$

30. $\frac{a}{5} - 2 = -13$

31. $2x + 23 = 49$

32. $\frac{x}{2} + 8 = -3$

Justify each step.

33. $24 - x = -16$

34. $\frac{x}{7} + 4 = 15$

35. $-8 = 2x - 5$

a. $24 - x - 24 = -16 - 24$

a. $\frac{x}{7} + 4 - 4 = 15 - 4$

a. $-8 + 5 = 2x - 5 + 5$

b. $-x = -40$

b. $\frac{x}{7} = 11$

b. $-3 = 2x$

c. $-1(-x) = -1(-40)$

c. $7(\frac{x}{7}) = 7(11)$

c. $-\frac{3}{2} = \frac{2x}{2}$

d. $x = 40$

d. $x = 77$

d. $-\frac{3}{2} = x$

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Practice 2-3

Solving Multi-Step Equations

Solve each equation. Check your answer.

- | | | |
|--|-------------------------------------|---|
| 1. $2n + 3n + 7 = -41$ | 2. $2x - 5x + 6.3 = -14.4$ | 3. $2z + 9.75 - 7z = -5.15$ |
| 4. $3h - 5h + 11 = 17$ | 5. $2t + 8 - t = -3$ | 6. $6a - 2a = -36$ |
| 7. $3c - 8c + 7 = -18$ | 8. $7g + 14 - 5g = -8$ | 9. $2b - 6 + 3b = 14$ |
| 10. $2(a - 4) + 15 = 13$ | 11. $7 + 2(a - 3) = -9$ | 12. $13 + 2(5c - 2) = 29$ |
| 13. $5(3x + 12) = -15$ | 14. $4(2a + 2) - 17 = 15$ | 15. $2(m + 1) = 16$ |
| 16. $-4x + 3(2x - 5) = 31$ | 17. $-6 - 3(2k + 4) = 18$ | 18. $3(t - 12) = 27$ |
| 19. $-w + 4(w + 3) = -12$ | 20. $4 = 0.4(3d - 5)$ | 21. $-4d + 2(3 + d) = -14$ |
| 22. $2x + \frac{3}{4}(4x + 16) = 7$ | 23. $2(3a + 2) = -8$ | 24. $5(t - 3) - 2t = -30$ |
| 25. $5(b + 4) - 6b = -24$ | 26. $\frac{2}{5}(5k + 35) - 8 = 12$ | 27. $0.4(2s + 4) = 4.8$ |
| 28. $\frac{2}{3}(9b - 27) = 36$ | 29. $\frac{1}{2}(12n - 8) = 26$ | 30. $0.5(2x - 4) = -17$ |
| 31. $18 = \frac{c + 5}{2}$ | 32. $\frac{2}{9}s = -6$ | 33. $\frac{1}{3}x = \frac{1}{2}$ |
| 34. $\frac{2}{3}g + \frac{1}{2}g = 14$ | 35. $\frac{3x + 7}{2} = 8$ | 36. $\frac{2x - 6}{4} = -7$ |
| 37. $\frac{2}{3}k + \frac{1}{4}k = 22$ | 38. $-\frac{4}{7}h = -28$ | 39. $-8 = \frac{4}{5}k$ |
| 40. $\frac{3}{4} - \frac{1}{3}z = \frac{1}{4}$ | 41. $-9 = \frac{3}{4}m$ | 42. $\frac{5}{6}c - \frac{2}{3}c = \frac{1}{3}$ |
| 43. $\frac{4}{5} = -\frac{4}{7}g$ | 44. $\frac{9x + 6 - 4x}{2} = 8$ | 45. $-\frac{1}{6}d = -4$ |

Write an equation to model each situation. Then solve.

- The attendance at a baseball game was 400 people. Student tickets cost \$2 and adult tickets cost \$3. Total ticket sales were \$1050. How many tickets of each type were sold?
- The perimeter of a pool table is 30 ft. The table is twice as long as it is wide. What is the length of the pool table?
- Lopez spent $\frac{1}{3}$ of his vacation money for travel and $\frac{2}{5}$ of his vacation money for lodging. He spent \$1100 for travel and lodging. What is the total amount of money he spent on his vacation?
- Victoria weighs $\frac{5}{7}$ as much as Mario. Victoria weighs 125 lb. How much does Mario weigh?
- Denise's cell phone plan is \$29.95 per month plus \$.10 per minute for each minute over 300 minutes of call time. Denise's cell phone bill is \$99.95. For how many minutes was she billed?

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Practice 2-4

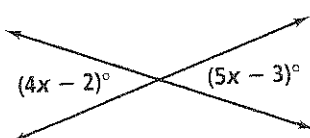
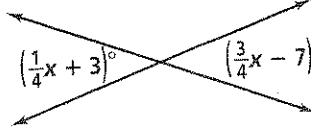
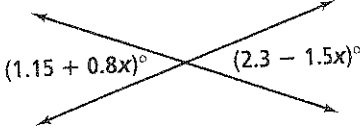
Solve each equation. Check your answer. If appropriate, write *identity* or *no solution*.

- | | | |
|---|---|------------------------------------|
| 1. $7 - 2n = n - 14$ | 2. $2(4 - 2r) = -2(r + 5)$ | 3. $3d + 8 = 2d - 7$ |
| 4. $6t = 3(t + 4) - t$ | 5. $8z - 7 = 3z - 7 + 5z$ | 6. $7x - 8 = 3x + 12$ |
| 7. $3(n - 1) = 5n + 3 - 2n$ | 8. $2(6 - 4d) = 25 - 9d$ | 9. $4s - 12 = -5s + 51$ |
| 10. $8(2f - 3) = 4(4f - 8)$ | 11. $6k - 25 = 7 - 2k$ | 12. $3v - 9 = 7 + 2v - v$ |
| 13. $4(b - 1) = -4 + 4b$ | 14. $\frac{1}{4}x + \frac{1}{2} = \frac{1}{4}x - \frac{1}{2}$ | 15. $6 - 4d = 16 - 9d$ |
| 16. $\frac{2}{3}a - \frac{3}{4} = \frac{3}{4}a$ | 17. $2s - 12 + 2s = 4s - 12$ | 18. $3.6y = 5.4 + 3.3y$ |
| 19. $4.3v - 6 = 8 + 2.3v$ | 20. $4b - 1 = -4 + 4b + 3$ | 21. $\frac{2}{3}(6x + 3) = 4x + 2$ |
| 22. $6y + 9 = 3(2y + 3)$ | 23. $4g + 7 = 5g - 1 - g$ | 24. $2(n + 2) = 5n - 5$ |
| 25. $6 - 3d = 5(2 - d)$ | 26. $6.1h = 9.3 - 3.2h$ | 27. $-4.4s - 2 = -5.5s - 4.2$ |
| 28. $3(2f + 4) = 2(3f - 6)$ | 29. $\frac{3}{4}t - \frac{5}{6} = \frac{2}{3}t$ | 30. $3v + 8 = 8 + 2v + v$ |
| 31. $\frac{1}{2}d - \frac{3}{4} = \frac{3}{5}d$ | 32. $5(r + 3) = 2r + 6$ | 33. $8 - 3(p - 4) = 2p$ |

Write an equation to model each situation. Then solve. Check your answer.

34. Hans needs to rent a moving truck. Suppose Company A charges a rate of \$40 per day and Company B charges a \$60 fee plus \$20 per day. For what number of days is the cost the same?
35. Suppose a video store charges nonmembers \$4 to rent each video. A store membership costs \$21 and members pay only \$2.50 to rent each video. For what number of videos is the cost the same?
36. Suppose your club is selling candles to raise money. It costs \$100 to rent a booth from which to sell the candles. If the candles cost your club \$1 each and are sold for \$5 each, how many candles must be sold to equal your expenses?

Find the value of x .

37. 
38. 
39. 

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