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.

46. 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?

47. 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?

48. 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?

49. Victoria weighs $\frac{5}{7}$ as much as Mario. Victoria weighs 125 lb. How much does Mario weigh?

50. 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?

Practice 2-4
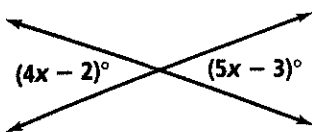
Equations with Variables on Both Sides

Solve each equation. Check your answer. If appropriate, write *identity* or *no solution.*
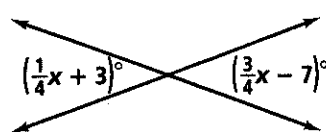
1. $7 - 2n = n - 14$

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.

$(4x - 2)°$ $(5x - 3)°$

38.

$\left(\frac{1}{4}x + 3\right)°$ $\left(\frac{3}{4}x - 7\right)°$

39.

$(1.15 + 0.8x)°$ $(2.3 - 1.5x)°$