Practice 3-3

Equations With Variables on Both Sides
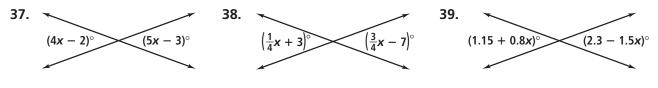
Solve each equation. Check your answer. If appropriate, write *identity* or *no solution*.

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.

$(1.15 + 0.8x)°$ $(2.3 - 1.5x)°$