Written Exercises

Solve each equation. If the equation is an identity or if it has no solution, write *identity* or *no solution*.

A

1. $5n = 2n + 6$
2. $8a = 2a + 30$
3. $y = 24 - 3y$
4. $2b = 80 - 8b$
5. $12n = 34 - 5n$
6. $3x = 27 - 15x$
7. $30 = 8 - 2x$
8. $51 = 9 - 3x$
9. $51a - 56 = 44a$
10. $39c + 78 = 33c$
11. $98 - 4b = -11b$
12. $-7a = -12a - 65$
13. $4n + 5 = 6n + 7$
14. $5p - 9 = 2p + 12$
15. $3p - 8 = 13 - 4p$
16. $89 + x = 2 - 2x$
17. $71 - 5x = 9x - 13$
18. $5n + 1 = 5n - 1$
19. $2(x - 6) = 3x$
20. $4(y - 6) = 7y$
21. $8(5 - n) = 2n$
22. $7(2 - m) = 3m$
23. $\frac{1}{2}x + 5 = x$
24. $\frac{2}{3}x - 7 = x$
25. $\frac{4 + y}{5} = y$
26. $\frac{x - 2}{3} = x$
27. $\frac{9 - 2y}{7} = y$
28. $\frac{6 - 4y}{2} = y$
29. $\frac{4n - 28}{3} = 2n$
30. $\frac{23 - 11c}{7} = 5c$

B

31. $\frac{1}{3}(12 - 6x) = 4 - 2x$
32. $\frac{1}{4}(20 - 4a) = 6 - a$
33. $5(2 + n) = 3(n + 6)$
34. $3(30 + s) = 4(s + 19)$
35. $5u + 5(1 - u) = u + 8$
36. $2(g - 2) - 4 = 2(g - 3)$
37. $3(m + 5) - 6 = 3(m + 3)$
38. $3(2 + v) - 4v = v + 16$
39. $3(5y + 2) - y = 2(y - 3)$
40. $4(3y - 1) + 13 = 5y + 2$
41. $6r - 2(2 - r) = 4(2r - 1)$
42. $5x + 2(1 - x) = 2(2x - 1)$
43. $3 + 4(p + 2) = 2p + 3(p + 4)$
44. $4(a + 2) = 14 - 2(3 - 2a)$

C

45. $3x + 2[1 - 3(x + 2)] = 2x$
46. $2[5(w + 3) - (w + 1)] = 3(1 + w)$
47. $5(2m + 3) - (1 - 2m) = 2[3(3 + 2m) - (3 - m)]$
48. $3(r + 1) - [2(3 - 2r) - 3(3 - r)] = 2(r + 5) - 4$

Problems

Solve.

A

1. Find a number that is 96 greater than its opposite.
2. Find a number that is 38 less than its opposite.
3. Find a number whose product with 9 is the same as its sum with 56.
4. Find a number that is 68 greater than three times its opposite.