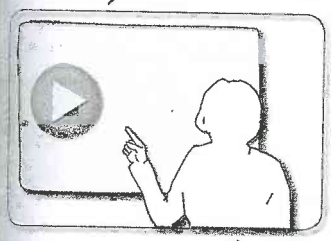
Martin-Gay Interactive Videos



See Video 2.1

Watch the section lecture video and answer the following questions.

OBJECTIVE 1

9. Complete these statements based on the lecture given before Example 1. The addition property of equality allows us to add the same number to (or subtract the same number from) _____ of an equation and have an equivalent equation. The multiplication property of equality allows us to multiply (or divide) both sides of an equation by the _____ nonzero number and have an equivalent equation.

OBJECTIVE 2

10. From Example 2, if an equation is simplified by removing parentheses before the properties of equality are applied, what property is used?

OBJECTIVE 3

11. In Example 3, what is the main reason given for first removing fractions from the equation?

OBJECTIVE 4

12. Complete this statement based on Example 4. When solving a linear equation and all variable terms subtract out and:
a. you have a _____ statement, then the equation has all real numbers for which the equation is defined as solutions.
b. you have a _____ statement, then the equation has no solution.

2.1 Exercise Set MyMathLab®

Solve each equation and check. See Examples 1 and 2.

1. $-5x = -30$
2. $-2x = 18$
3. $-10 = x + 12$
4. $-25 = y + 30$
5. $x - 2.8 = 1.9$
6. $y - 8.6 = -6.3$
7. $5x - 4 = 26 + 2x$
8. $5y - 3 = 11 + 3y$
9. $-4.1 - 7z = 3.6$
10. $10.3 - 6x = -2.3$
11. $5y + 12 = 2y - 3$
12. $4x + 14 = 6x + 8$

Solve each equation and check. See Examples 3 and 4.

13. $3x - 4 - 5x = x + 4 + x$
14. $13x - 15x + 8 = 4x + 2 - 24$
15. $8x - 5x + 3 = x - 7 + 10$
16. $6 + 3x + x = -x + 8 - 26 + 24$
17. $5x + 12 = 2(2x + 7)$
18. $2(4x + 3) = 7x + 5$
19. $3(x - 6) = 5x$
20. $6x = 4(x - 5)$
21. $-2(5y - 1) - y = -4(y - 3)$
22. $-4(3n - 2) - n = -11(n - 1)$

Solve each equation and check. See Examples 5 through 7.

23. $\frac{x}{2} + \frac{x}{3} = \frac{3}{4}$
24. $\frac{x}{2} + \frac{x}{5} = \frac{5}{4}$
25. $\frac{3t}{4} - \frac{t}{2} = 1$
26. $\frac{4r}{5} - \frac{r}{10} = 7$
27. $\frac{n-3}{4} + \frac{n+5}{7} = \frac{5}{14}$
28. $\frac{2+h}{9} + \frac{h-1}{3} = \frac{1}{3}$
29. $0.6x - 10 = 1.4x - 14$
30. $0.3x + 2.4 = 0.1x + 4$
31. $\frac{3x-1}{9} + x = \frac{3x+1}{3} + 4$
32. $\frac{2z+7}{8} - 2 = z + \frac{z-1}{2}$
33. $1.5(4 - x) = 1.3(2 - x)$
34. $2.4(2x + 3) = -0.1(2x + 3)$

Solve each equation. See Examples 8 and 9.

35. $4(n + 3) = 2(6 + 2n)$
36. $6(4n + 4) = 8(3 + 3n)$
37. $3(x + 1) + 5 = 3x + 2$
38. $4(x + 2) + 4 = 4x - 8$
39. $2(x - 8) + x = 3(x - 6) + 2$
40. $5(x - 4) + x = 6(x - 2) - 8$
41. $4(x + 5) = 3(x - 4) + x$
42. $9(x - 2) = 8(x - 3) + x$

MIXED PRACTICE

Solve each equation. See Examples 1 through 9.

43. $\frac{3}{8} + \frac{b}{3} = \frac{5}{12}$
44. $\frac{a}{2} + \frac{7}{4} = 5$
45. $x - 10 = -6x - 10$
46. $4x - 7 = 2x - 7$
47. $5(x - 2) + 2x = 7(x + 4) - 38$
48. $3x + 2(x + 4) = 5(x + 1) + 3$
49. $y + 0.2 = 0.6(y + 3)$
50. $-(w + 0.2) = 0.3(4 - w)$
51. $\frac{1}{4}(a + 2) = \frac{1}{6}(5 - a)$
52. $\frac{1}{3}(8 + 2c) = \frac{1}{5}(3c - 5)$
53. $2y + 5(y - 4) = 4y - 2(y - 10)$