1.1 SECTION EXERCISES

VERBAL

1. Is $\sqrt{2}$ an example of a rational terminating, rational repeating, or irrational number? Tell why it fits that category.

2. What is the order of operations? What acronym is used to describe the order of operations, and what does it stand for?

3. What do the Associative Properties allow us to do when following the order of operations? Explain your answer.

NUMERIC

For the following exercises, simplify the given expression.

4. $10 + 2 \cdot (5 - 3)$

5. $6 \div 2 - (81 \div 3^2)$

6. $18 + (6 - 8)^3$

7. $-2 \cdot [16 \div (8 - 4)^2]^2$

8. $4 - 6 + 2 \cdot 7$

9. $3(5 - 8)$

10. $4 + 6 - 10 \div 2$

11. $12 \div (36 \div 9) + 6$

12. $(4 + 5)^2 \div 3$

13. $3 - 12 \cdot 2 + 19$

14. $2 + 8 \cdot 7 \div 4$

15. $5 + (6 + 4) - 11$

16. $9 - 18 \div 3^2$

17. $14 \cdot 3 \div 7 - 6$

18. $9 - (3 + 11) \cdot 2$

19. $6 + 2 \cdot 2 - 1$

20. $64 \div (8 + 4 \cdot 2)$

21. $9 + 4(2^2)$

22. $(12 \div 3 \cdot 3)^2$

23. $25 \div 5^2 - 7$

24. $(15 - 7) \cdot (3 - 7)$

25. $2 \cdot 4 - 9(-1)$

26. $4^2 - 25 \cdot \frac{1}{5}$

27. $12(3 - 1) \div 6$

ALGEBRAIC

For the following exercises, solve for the variable.

28. $8(x + 3) = 64$

29. $4y + 8 = 2y$

30. $(11a + 3) - 18a = -4$

31. $4z - 2z(1 + 4) = 36$

32. $4y(7 - 2)^2 = -200$

33. $-(2x)^2 + 1 = -3$

34. $8(2 + 4) - 15b = b$

35. $2(11c - 4) = 36$

36. $4(3 - 1)x = 4$

37. $\frac{1}{4}(8w - 4^2) = 0$

For the following exercises, simplify the expression.

38. $4x + x(13 - 7)$

39. $2y - (4)^2 y - 11$

40. $\frac{a}{2^3}(64) - 12a \div 6$

41. $8b - 4b(3) + 1$

42. $5l \div 3l \cdot (9 - 6)$

43. $7z - 3 + z \cdot 6^2$

44. $4 \cdot 3 + 18x \div 9 - 12$

45. $9(y + 8) - 27$

46. $\left(\frac{9}{6}t - 4\right)2$

47. $6 + 12b - 3 \cdot 6b$

48. $18y - 2(1 + 7y)$

49. $\left(\frac{4}{9}\right)^2 \cdot 27x$

50. $8(3 - m) + 1(-8)$

51. $9x + 4x(2 + 3) - 4(2x + 3x)$

52. $5^2 - 4(3x)$