

9.  $\frac{2 \cdot 3^2}{6} - 3 \cdot 2^2$

10.  $-2^3 + 3 \left[ \frac{5^2 + 3}{4 - (-3)} \right] + (-3)^2$

■ Evaluate each expression.

11.  $\frac{1}{2}gt^2 - 6t$ , for  $g = 32$  and  $t = 2$

12.  $\frac{a - ar^n}{1 - r}$ , for  $a = 2.1$ ,  $r = 0.5$ , and  $n = 3$

## [1.2]

■ Simplify each expression.

13.  $(x^2 - 2x + 3) - (2x^2 + x - 4)$

14.  $(2y^3 - y^2 + y - 1) - (y^3 + 2y^2 + 3y - 4)$

15.  $y - [3y - (y + 4)]$

16.  $4 - [2y + (y - 3) - 5]$

17.  $[x - (x - y)] - (2x - [x - (x + y)] - y)$

18.  $-(y - [2y + y - (y - 2)] + 1) + [3y - (3 - 2y) - 2]$

■ Evaluate each polynomial.

19.  $x^3 - 2x^2 - x + 1$ , for  $x = -2$

20.  $2t^3 - t^2 + 2t - 3$ , for  $t = 1.2$

21.  $y^4 - y^3$ , for  $y = -3$

22.  $x^5 - x^2$ , for  $x = -2$

## [1.3]

■ Multiply.

23.  $(-2a^3)(-a^2b)(3ab^2)$

24.  $-b^2(ab)(3a^2)a^2$

25.  $(3xy^2)^2(xy) - x(x^2y)$

26.  $(-2y)^2(x^3y) + (x^2y)^2 - y^3$

27.  $ab^2(2a^2 - 3ab + b)$

28.  $-a^2b(3a^2 - 2ab^2 - b^2)$

29.  $(3x - 2y)(2x + 4y)$

30.  $(x + 4)(x^2 - 3x + 2)$

31.  $(2x - 3)^3$

32.  $(3x^3 - 1)(3x^3 + 1)$

33.  $a[a - 2(a + 1) - (a - 3)]$

34.  $-b[2b^2 + b(b - 1) + b]$

## [1.4]

■ Factor completely.

35.  $a(a - 3)^3 - a^2(a - 3)^2$

36.  $2(b + 1)^2(b - 3) + 4(b + 1)^3$

37.  $14x^2 + 19x - 3$

38.  $6x^2y^2 - 13xy - 5$

39.  $6xy + 4x - 3y - 2$

40.  $2x^3 - 4x^2 + 6x - 12$

41.  $3x^4 - 4x^3 - 4x^2$

42.  $x^3y - x^2y^2 - 2xy^3$

43.  $y^{4n} - y^n$

44.  $x^{n+1} + x^n + x$

## [1.5]

■ Write each expression as a polynomial and simplify.

45.  $2[x + (x - 1)^2]$

46.  $-y[y - (y - 2)^2 + 3]$

■ Factor completely.

47.  $4x^2 - 49y^2$

48.  $y^2 - (y - 1)^2$

49.  $(a + b)^3 - 8$

50.  $a^3 + (a^2 - b)^3$