

## Page 333 #15-26 All

**CLASSIFYING POLYNOMIALS** Decide whether the function is a polynomial function. If it is, write the function in standard form and state the degree, type, and leading coefficient.

15.  $f(x) = 12 - 5x$       16.  $f(x) = 2x + \frac{3}{5}x^4 + 9$       17.  $f(x) = x + \pi$   
18.  $f(x) = x^2\sqrt{2} + x - 5$       19.  $f(x) = x - 3x^{-2} - 2x^3$       20.  $f(x) = -2$   
21.  $f(x) = x^2 - x + 1$       22.  $f(x) = 22 - 19x + 2^x$       23.  $f(x) = 36x^2 - x^3 + x^4$   
24.  $f(x) = 3x^2 - 2x^{-x}$       25.  $f(x) = 3x^3$       26.  $f(x) = -6x^2 + x - \frac{3}{x}$

## Page 341 #13-51 ODD

**ADDING AND SUBTRACTING POLYNOMIALS** Find the sum or difference.

13.  $(8x^2 + 1) + (3x^2 - 2)$       14.  $(3x^3 + 10x + 5) - (x^3 - 4x + 6)$   
15.  $(x^2 - 6x + 5) - (x^2 + x - 2)$       16.  $(16 - 13x) + (10x - 11)$   
17.  $(7x^3 - 1) - (15x^3 + 4x^2 - x + 3)$       18.  $8x + (14x + 3 - 41x^2 + x^3)$   
19.  $(4x^2 - 11x + 10) + (5x - 31)$       20.  $(9x^3 - 4 + x^2 + 8x) - (7x^3 - 3x + 7)$   
21.  $(-3x^3 + x - 11) - (4x^3 + x^2 - x)$       22.  $(6x^2 - 19x + 5) - (19x^2 - 4x + 9)$   
23.  $(10x^3 - 4x^2 + 3x) - (x^3 - x^2 + 1)$       24.  $(50x - 3) + (8x^3 + 7x^2 + x + 4)$   
25.  $(10x - 3 + 7x^2) + (x^3 - 2x + 17)$       26.  $(3x^3 - 5x^4 - 10x + 1) + (17x^4 - x^3)$

**MULTIPLYING POLYNOMIALS** Find the product of the polynomials.

27.  $x(x^2 + 6x - 7)$       28.  $10x^2(x - 5)$       29.  $-4x(x^2 - 8x + 3)$   
30.  $5x(3x^2 - x + 3)$       31.  $(x - 4)(x - 7)$       32.  $(x + 9)(x - 2)$   
33.  $(x + 3)(x^2 - 4x + 9)$       34.  $(x + 8)(x^2 - 7x - 3)$       35.  $(2x + 5)(3x^3 - x^2 + x)$   
36.  $(6x + 2)(2x^2 - 6x + 1)$       37.  $(x + 11)(x^2 - 5x + 9)$       38.  $(4x^2 - 1)(x^2 - 6x + 9)$   
39.  $(x - 1)(x^3 + 2x^2 + 2)$       40.  $(x + 1)(5x^3 - x^2 + x - 4)$   
41.  $(3x^2 - 2)(x^2 + 4x + 3)$       42.  $(-x^3 - 2)(x^2 + 3x - 3)$   
43.  $(x^2 + x + 4)(2x^2 - x + 1)$       44.  $(x^2 - x - 3)(x^2 + 4x + 2)$

**MULTIPLYING THREE BINOMIALS** Find the product of the binomials.

45.  $(x + 9)(x - 2)(x - 7)$       46.  $(x + 3)(x - 4)(x - 5)$   
47.  $(x + 5)(x + 7)(-x + 1)$       48.  $(2x - 3)(x + 7)(x + 6)$   
49.  $(x - 9)(x - 2)(3x + 2)$       50.  $(x - 1)(-2x - 5)(x - 8)$   
51.  $(2x + 1)(3x + 1)(x + 4)$       52.  $(4x - 1)(2x - 1)(3x - 2)$