

 **Practice and Apply**

Write each polynomial in standard form.

11. $5x^3 + 4x + 2x^2 + 1$

12. $4x^4 + x^2 + x^3 + x + 1$

13. $2.7x^3 + 3.3x^8 + 4.1x^2$

14. $9.1x^2 + 5.4x^5 + 3.3x^2 + 2.1$

15. $\frac{x^7}{13} + \frac{x^9}{7} - \frac{2}{3}$

16. $\frac{13}{15}x^4 + \frac{5}{7}x^3 + \frac{3}{5}x^5 + \frac{1}{2}$

Determine whether each expression is a polynomial. If so, classify the polynomial by degree and by number of terms.

17. $7x^5 + 3x^3 - 2x + 4$

18. $-4x^2 + 3x^3 - 5x^6 + 4$

19. $3^x + 2^x - x - 7$

20. $4^{2x} + 5^x - x + 1$

21. $0.35x^4 + 2x^2 + 3.8x$

22. $7.81x^4 + 8.9x^3 + 2.5x^2$

23. $\frac{3}{x^2} + \frac{5}{x} + 6$

24. $\frac{8}{x^3} - \frac{7}{x^2} + x$

25. $\frac{5}{7}x^6 + \frac{2}{3}x^4 + 5$

26. $\frac{x^5}{5} - \frac{x^3}{3}$

27. $\sqrt{x} - 1$

28. $7\sqrt{x} + 4$

Evaluate each polynomial expression for the indicated value of x .

29. $x^3 + x^2 + 1$ for $x = -3$

30. $x^4 + 2x^3 + 2$ for $x = -2$

31. $-2x^3 - 3x + 2$ for $x = 4$

32. $-4x^3 + 1 + x$ for $x = 3$

33. $3x^3 + x^2 + 2x + 4$ for $x = 5$

34. $5x^3 + 2x^2 - 5x + 2$ for $x = 6$

35. $\frac{1}{4}x^4 + \frac{1}{8}x^3 + \frac{3}{8}x^2 + \frac{5}{8}x + \frac{7}{8}$ for $x = 2$

36. $\frac{3}{10}x^3 + \frac{7}{10}x^2 + \frac{1}{10}x + \frac{9}{10}$ for $x = 10$

37. $1 + x^2 - 3x^3$ for $x = 2.5$

38. $5x^3 + 4x + 2x^2 + 1$ for $x = 3.8$