



**1-1 Sets of Numbers**

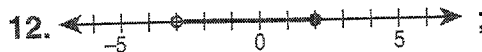
Order the given numbers from least to greatest. Then classify each number by the subsets of the real numbers to which it belongs.

1.  $7\frac{1}{4}$ ,  $\sqrt{21}$ ,  $-4.15$ ,  $3.\overline{66}$
2.  $7\frac{1}{4}$        3.  $-4.15$
4.  $\sqrt{21}$        5.  $3.\overline{66}$
6.  $-\sqrt{10}$ ,  $7$ ,  $\frac{1}{5}$ ,  $-3$

Rewrite each set in the indicated notation.

11.  $\{x \mid -2 \leq x < 4\}$ ;

interval notation



set-builder notation

**1-2 Properties of Real Numbers**

Identify the property demonstrated by each equation.

13.  $t + 4 = 4 + t$

14.  $a + (6 + y) = (a + 6) + y$

15.  $2a + 2b = 2(a + b)$

16.  $0 + 21 = 21$

**1-3 Square Roots**

Simplify each expression.

19.  $\frac{\sqrt{80}}{\sqrt{5}}$

20.  $-\sqrt{72}$

21.  $\sqrt{18} \cdot \sqrt{28}$

22.  $9\sqrt{50} - 4\sqrt{2}$

## 1-4 Simplifying Algebraic Expressions

Evaluate each expression for the given values of the variables.

23.  $12ab - ab^2$  for  $a = 3$  and  $b = 4$

24.  $\frac{2ab^2}{5a^2b}$  for  $a = -2$  and  $b = 3$

Simplify each expression.

25.  $7x^2 - 5y + 9x^2 + y$

26.  $3(2x - y) - 5x + 6y$

## 1-5 Properties of Exponents

Simplify each expression. Assume all variables are nonzero.

27.  $(x^8y^{-8})^2$

28.  $\frac{6a^{-5}b^3}{-3ab^{-2}}$

29.  $6(m^2n^3)^{-3}$

30.  $\left(\frac{x^2y^4}{y^{10}}\right)^3$

## 1-7 Function Notation

For each function, determine  $f(-1)$ ,  $f(0)$ , and  $f(2)$ .

35.  $f(x) = x^2 - 4$

36.  $f(x) = 8 - x^3$

37.  $f(x) = -3x + 4$

## 1-9 Introduction to Parent Functions

Identify the parent function for  $g$  from its equation. Then graph  $g$  on your calculator and describe what transformation of the parent function it represents.

41.  $g(x) = 3x - 2$

42.  $g(x) = x^3 + 1$

43.  $g(x) = \frac{1}{2}x^2 - 3$