

- 11-4** The area of a rhombus equals half the product of its diagonals. ( $A = \frac{1}{2}d_1d_2$ ) (p. 430)
- 11-5** The area of a trapezoid equals half the product of the height and the sum of the bases. ( $A = \frac{1}{2}h(b_1 + b_2)$ ) (p. 435)
- 11-6** The area of a regular polygon is equal to half the product of the apothem and the perimeter. ( $A = \frac{1}{2}ap$ ) (p. 441)
- Related Formulas** In a circle:  $C = 2\pi r = \pi d$      $A = \pi r^2$  (p. 447)
- 11-7** If the scale factor of two similar figures is  $a:b$ , then  
 (1) the ratio of the perimeters is  $a:b$ .  
 (2) the ratio of the areas is  $a^2:b^2$ . (p. 457)

## Areas and Volumes of Solids

- 12-1** The lateral area of a right prism equals the perimeter of a base times the height of the prism. (L.A. =  $ph$ ) (p. 476)
- 12-2** The volume of a right prism equals the area of a base times the height of the prism. ( $V = Bh$ ) (p. 476)
- 12-3** The lateral area of a regular pyramid equals half the perimeter of the base times the slant height. (L.A. =  $\frac{1}{2}pl$ ) (p. 483)
- 12-4** The volume of a pyramid equals one third the area of the base times the height of the pyramid. ( $V = \frac{1}{3}Bh$ ) (p. 483)
- 12-5** The lateral area of a cylinder equals the circumference of a base times the height of the cylinder. (L.A. =  $2\pi rh$ ) (p. 490)
- 12-6** The volume of a cylinder equals the area of a base times the height of the cylinder. ( $V = \pi r^2h$ ) (p. 490)
- 12-7** The lateral area of a cone equals half the circumference of the base times the slant height. (L.A. =  $\frac{1}{2} \cdot 2\pi r \cdot l$  or L.A. =  $\pi rl$ ) (p. 491)
- 12-8** The volume of a cone equals one third the area of the base times the height of the cone. ( $V = \frac{1}{3}\pi r^2h$ ) (p. 491)
- 12-9** The area of a sphere equals  $4\pi$  times the square of the radius. ( $A = 4\pi r^2$ ) (p. 497)
- 12-10** The volume of a sphere equals  $\frac{4}{3}\pi$  times the cube of the radius. ( $V = \frac{4}{3}\pi r^3$ ) (p. 497)
- 12-11** If the scale factor of two similar solids is  $a:b$ , then  
 (1) the ratio of corresponding perimeters is  $a:b$ .  
 (2) the ratio of the base areas, of the lateral areas, and of the total areas is  $a^2:b^2$ .  
 (3) the ratio of the volumes is  $a^3:b^3$ . (p. 509)

## Coordinate Geometry

- 13-1** (**The Distance Formula**) The distance  $d$  between points  $(x_1, y_1)$  and  $(x_2, y_2)$  is given by  $d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$ . (p. 524)
- 13-2** An equation of the circle with center  $(a, b)$  and radius  $r$  is  $(x - a)^2 + (y - b)^2 = r^2$ . (p. 525)