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. = πrl) (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 4π 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)