

Equations of a Line

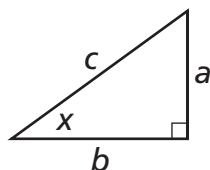
Slope-Intercept Form: $y = mx + b$
 where m = slope and b = y-intercept

Point-Slope Form: $y - y_1 = m(x - x_1)$
 where m = slope, (x_1, y_1) = point on line

Combinations and Permutations

$${}_nC_r = \frac{n!}{r!(n-r)!} \quad {}_nP_r = \frac{n!}{(n-r)!}$$

Formulas for Right Triangles



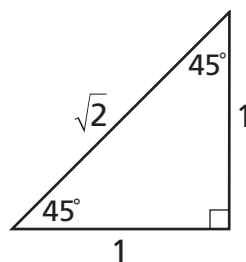
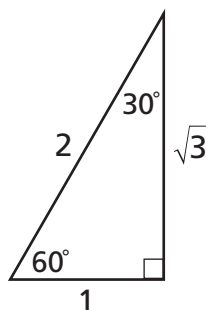
$$\sin x = \frac{a}{c} = \left(\frac{\text{opp}}{\text{hyp}} \right)$$

$$\cos x = \frac{b}{c} = \left(\frac{\text{adj}}{\text{hyp}} \right)$$

$$\tan x = \frac{a}{b} = \left(\frac{\text{opp}}{\text{adj}} \right)$$

Pythagorean Theorem: $a^2 + b^2 = c^2$

Special Right Triangles



Coordinate Geometry Formulas

Let (x_1, y_1) and (x_2, y_2) be two points in the plane.

$$\text{slope} = \frac{y_2 - y_1}{x_2 - x_1} \text{ where } x_2 \neq x_1$$

$$\text{midpoint} = \left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2} \right)$$

$$\text{distance} = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$

Polygon Angle Formulas

Sum of degree measures of the interior angles of a polygon:

$$180(n - 2)$$

Degree measure of an interior angle of a regular polygon:

$$\frac{180(n - 2)}{n}$$

where n is the number of sides of the polygon

Interest Formulas

Simple Interest: $A = P(1 + rt)$

Compound Interest: $A = P\left(1 + \frac{r}{n}\right)^{nt}$

A = amount (including interest)

P = principal

r = interest rate (expressed as a decimal)

n = number of compoundings per year

t = number of years

Quadratic Equations

Let $ax^2 + bx + c = 0$, where $a \neq 0$.

$$\text{Then } x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

$$\text{x-coordinate of vertex} = -\frac{b}{2a}$$

Distance Traveled

$$d = rt$$

distance = rate \times time