

Formula Page

Quadratic Formula

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

Equation of a Quadratic Relation

$$y = a(x - h)^2 + k$$

$$y = ax^2 + bx + c$$

$$y = a(x - r)(x - s)$$

Equation of a Line

$$y = mx + b$$

$$Ax + By + C = 0$$

$$y = a(x - r)$$

Trigonometric Ratios

$$\sin \theta = \frac{\text{opp}}{\text{hyp}}$$

$$\cos \theta = \frac{\text{adj}}{\text{hyp}}$$

$$\tan \theta = \frac{\text{opp}}{\text{hyp}}$$

Sine Law

$$\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$$

$$\frac{\sin A}{a} = \frac{\sin B}{b} = \frac{\sin C}{c}$$

Cosine Law

$$a^2 = b^2 + c^2 - 2bc \cos A$$

$$b^2 = a^2 + c^2 - 2ac \cos B$$

$$c^2 = a^2 + b^2 - 2ab \cos C$$

Pythagorean Theorem

$$a^2 + b^2 = c^2$$

Length of a Line Segment

$$L^2 = (x_2 - x_1)^2 + (y_2 - y_1)^2$$

Equation of a Circle

$$x^2 + y^2 = r^2$$

Midpoint of a Line Segment

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

Slope of a Line Segment

$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

Perimeter

$$P = \Sigma \text{sides}$$

Circumference

$$C = 2\pi r$$

Area of a Trapezoid

$$A = \left(\frac{a + b}{2} \right) (h)$$

Area of a Triangle

$$A = \frac{bh}{2}$$

Area of a Rectangle

$$A = lw$$

Area of a Circle

$$A = \pi r^2$$