

Mathematics

Geometry

Triangle $A = \frac{1}{2}bh$

Rectangular Prism $V = lwh$
 $SA = 2lw + 2hw + 2lh$

Rectangle $A = lw$
 $P = 2l + 2w$

Circle $A = \pi r^2$
 $C = 2\pi r$

Trapezoid $A = \frac{1}{2}h(b_1 + b_2)$

Cylinder $V = \pi r^2h$

Parallelogram $A = bh$

Sphere $V = \frac{4}{3}\pi r^3$

Trigonometry

$$\sin \theta = \frac{\text{opposite leg}}{\text{hypotenuse}}$$

Arc Length: $s = r\theta$

$$\csc \theta = \frac{\text{hypotenuse}}{\text{opposite leg}}$$

Area of Sector: $A = \frac{1}{2}\theta r^2$

$$\cos \theta = \frac{\text{adjacent leg}}{\text{hypotenuse}}$$

Law of Sines

$$\sec \theta = \frac{\text{hypotenuse}}{\text{adjacent leg}}$$

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

$$\tan \theta = \frac{\text{opposite leg}}{\text{adjacent leg}}$$

Law of Cosines

$$\cot \theta = \frac{\text{adjacent leg}}{\text{opposite leg}}$$

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

Equation of a Line

Slope-Intercept Form:

$$y = mx + b$$

Point-Slope Form:

$$y - y_1 = m(x - x_1)$$

Distance

$$d = rt$$

Midpoint Formula

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

Slope of a Line

$$\text{Slope} = \frac{y_2 - y_1}{x_2 - x_1}$$

Quadratic Formula

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

Pythagorean Theorem

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

Distance Formula

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

Sum of Measures of Interior Angles of a Polygon

$$(n - 2)180$$