

STAAR GEOMETRY REFERENCE MATERIALS



CIRCUMFERENCE

Circle $C = 2\pi r$ or $C = \pi d$

AREA

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

Rectangle or parallelogram $A = bh$

Rhombus $A = \frac{1}{2}d_1d_2$

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

Regular polygon $A = \frac{1}{2}aP$

Circle $A = \pi r^2$

SURFACE AREA

	Lateral	Total
Prism	$S = Ph$	$S = Ph + 2B$
Pyramid	$S = \frac{1}{2}Pl$	$S = \frac{1}{2}Pl + B$
Cylinder	$S = 2\pi rh$	$S = 2\pi rh + 2\pi r^2$
Cone	$S = \pi rl$	$S = \pi rl + \pi r^2$
Sphere		$S = 4\pi r^2$

VOLUME

Prism or cylinder $V = Bh$

Pyramid or cone $V = \frac{1}{3}Bh$

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

STAAR GEOMETRY REFERENCE MATERIALS

COORDINATE GEOMETRY

Midpoint

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

Distance formula

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

Slope of a line

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

Slope-intercept form of a linear equation

$$y = mx + b$$

Point-slope form of a linear equation

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

Standard form of a linear equation

$$Ax + By = C$$

RIGHT TRIANGLES

Pythagorean theorem

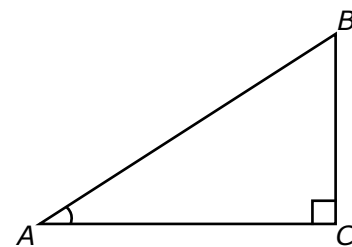
$$a^2 + b^2 = c^2$$

Trigonometric ratios

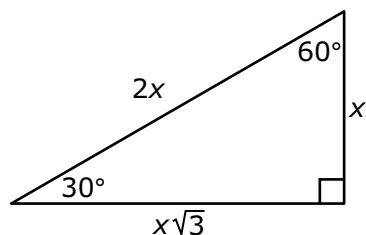
$$\sin A = \frac{\text{opposite leg}}{\text{hypotenuse}}$$

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

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



30° - 60° - 90° triangle



45° - 45° - 90° triangle

