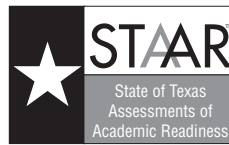


STAAR GEOMETRY REFERENCE MATERIALS



CIRCUMFERENCE

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

Triangle	$A = \frac{1}{2}bh$
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Rectangle or parallelogram	$A = bh$
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Rhombus	$A = \frac{1}{2}d_1d_2$
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Trapezoid	$A = \frac{1}{2}(b_1 + b_2)h$
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Regular polygon	$A = \frac{1}{2}aP$
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Circle	$A = \pi r^2$
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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	$V = Bh$
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Pyramid or cone	$V = \frac{1}{3}Bh$
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Sphere	$V = \frac{4}{3}\pi r^3$
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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

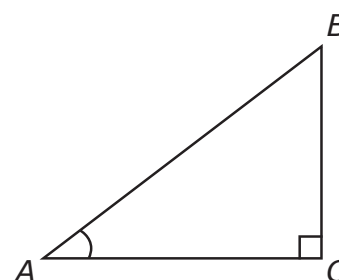
$$a^2 + b^2 = c^2$$

Trigonometric ratios

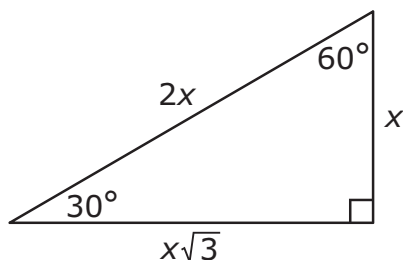
$$\sin A = \frac{\text{opposite leg}}{\text{hypotenuse}}$$

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

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



30° – 60° – 90° triangle



45° – 45° – 90° triangle

