






Algebra 1 End-of-Course and Geometry End-of-Course Assessments Reference Sheet

Area	
Parallelogram	$A = bh$
Triangle	$A = \frac{1}{2}bh$
Trapezoid	$A = \frac{1}{2}h(b_1 + b_2)$
Circle	$A = \pi r^2$
Regular Polygon	$A = \frac{1}{2}aP$

KEY	
b = base	A = area
h = height	B = area of base
w = width	C = circumference
d = diameter	V = volume
r = radius	P = perimeter
ℓ = slant height	of base
a = apothem	S.A. = surface area
Use 3.14 or $\frac{22}{7}$ for π .	

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

Volume/Capacity		Total Surface Area	
	Rectangular Prism $V = bwh$ or $V = Bh$	$S.A. = 2bh + 2bw + 2hw$ or $S.A. = Ph + 2B$	
	Right Circular Cylinder $V = \pi r^2 h$ or $V = Bh$	$S.A. = 2\pi r h + 2\pi r^2$ or $S.A. = 2\pi r h + 2B$	
	Right Square Pyramid $V = \frac{1}{3}Bh$	$S.A. = \frac{1}{2}P\ell + B$	
	Right Circular Cone $V = \frac{1}{3}\pi r^2 h$ or $V = \frac{1}{3}Bh$	$S.A. = \frac{1}{2}(2\pi r)\ell + B$	
	Sphere $V = \frac{4}{3}\pi r^3$	$S.A. = 4\pi r^2$	

Sum of the measures of the interior angles of a polygon = $180(n-2)$

Measure of an interior angle of a regular polygon = $\frac{180(n-2)}{n}$

where:

n represents the number of sides

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<p style="text-align: center;">Slope formula</p> $m = \frac{y_2 - y_1}{x_2 - x_1}$ <p>where m = slope and (x_1, y_1) and (x_2, y_2) are points on the line</p>	<p style="text-align: center;">Distance between two points</p> <p>$P_1(x_1, y_1)$ and $P_2(x_2, y_2)$</p> $\sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$
<p style="text-align: center;">Slope-intercept form of a linear equation</p> $y = mx + b$ <p>where m = slope and b = y-intercept</p>	<p style="text-align: center;">Midpoint between two points</p> <p>$P_1(x_1, y_1)$ and $P_2(x_2, y_2)$</p> $\left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2} \right)$
<p style="text-align: center;">Point-slope form of a linear equation</p> $y - y_1 = m(x - x_1)$ <p>where m = slope and (x_1, y_1) is a point on the line</p>	<p style="text-align: center;">Quadratic formula</p> $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$ <p>where a, b, and c are coefficients in an equation of the form $ax^2 + bx + c = 0$</p>
<p style="text-align: center;">Special Right Triangles</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> <p>30-60-90 triangle: legs x and $x\sqrt{3}$, hypotenuse $2x$.</p> </div> <div style="text-align: center;"> <p>45-45-90 triangle: legs x and x, hypotenuse $x\sqrt{2}$.</p> </div> </div>	<p style="text-align: center;">Trigonometric Ratios</p> <div style="display: flex; align-items: center;"> <div> $\sin A^\circ = \frac{\text{opposite}}{\text{hypotenuse}}$ $\cos A^\circ = \frac{\text{adjacent}}{\text{hypotenuse}}$ $\tan A^\circ = \frac{\text{opposite}}{\text{adjacent}}$ </div> </div>

Conversions	
<ul style="list-style-type: none"> 1 yard = 3 feet 1 mile = 1,760 yards = 5,280 feet 1 acre = 43,560 square feet 1 hour = 60 minutes 1 minute = 60 seconds 	<ul style="list-style-type: none"> 1 cup = 8 fluid ounces 1 pint = 2 cups 1 quart = 2 pints 1 gallon = 4 quarts 1 pound = 16 ounces 1 ton = 2,000 pounds
<ul style="list-style-type: none"> 1 meter = 100 centimeters = 1000 millimeters 1 kilometer = 1000 meters 1 liter = 1000 milliliters = 1000 cubic centimeters 1 gram = 1000 milligrams 1 kilogram = 1000 grams 	