






Grade 10 FCAT Mathematics Reference Sheet

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

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

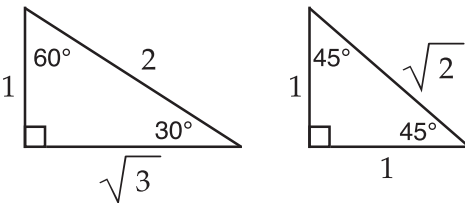
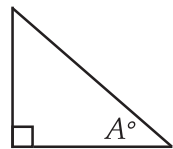
Circumference
 $C = \pi d$ or $C = 2\pi r$

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

In the following formulas, n represents the number of sides.

- In a polygon, the sum of the measures of the interior angles is equal to $180(n - 2)$.
- In a regular polygon, the measure of an interior angle is equal to $\frac{180(n - 2)}{n}$.

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<p>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>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>Slope-intercept form of an equation</p> $y = mx + b$ <p>where m = slope and b = the y-intercept.</p>	<p>Midpoint between two points</p> <p>$P_1(x_1, y_1)$ and $P_2(x_2, y_2)$:</p> $\left(\frac{x_2 + x_1}{2}, \frac{y_2 + y_1}{2} \right)$
<p>Point-slope formula</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>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>Special Triangles</p> 	<p>Trigonometric Ratios</p>  $\sin A^\circ = \frac{\text{Opposite}}{\text{Hypotenuse}}$ $\cos A^\circ = \frac{\text{Adjacent}}{\text{Hypotenuse}}$ $\tan A^\circ = \frac{\text{Opposite}}{\text{Adjacent}}$

Conversions

1 yard = 3 feet = 36 inches
 1 mile = 1,760 yards = 5,280 feet
 1 acre = 43,560 square feet
 1 hour = 60 minutes
 1 minute = 60 seconds

1 liter = 1000 milliliters = 1000 cubic centimeters
 1 meter = 100 centimeters = 1000 millimeters
 1 kilometer = 1000 meters
 1 gram = 1000 milligrams
 1 kilogram = 1000 grams

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