

# Grades 6–8 FCAT 2.0 Mathematics Reference Sheet

## Area

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

### KEY

$b$ = base	$A$ = area
$h$ = height	$B$ = area of base
$w$ = width	$C$ = circumference
$d$ = diameter	$V$ = volume
$r$ = radius	$P$ = perimeter of base
$\ell$ = slant height	$S.A.$ = surface area

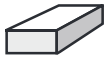



Use 3.14 or  $\frac{22}{7}$  for  $\pi$ .

### 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 $V = \frac{1}{3}Bh$	$S.A. = \frac{1}{2}(2\pi r)\ell + B$

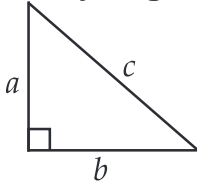
Sum of the measures of the interior angles of a polygon =  $180(n - 2)$

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><b>Pythagorean theorem</b></p>  $a^2 + b^2 = c^2$	<p><b>Simple interest formula</b></p> $I = prt$ <p>where <math>p</math> = principal, <math>r</math> = rate, <math>t</math> = time</p>
<p><b>Slope-intercept form of a linear equation</b></p> $y = mx + b$ <p>where <math>m</math> = slope and <math>b</math> = <math>y</math>-intercept</p>	<p><b>Distance, rate, time formula</b></p> $d = rt$ <p>where <math>d</math> = distance, <math>r</math> = rate, <math>t</math> = time</p>

## Conversions within a System of Measure

1 yard = 3 feet	1 meter = 100 centimeters = 1000 millimeters
1 mile = 1,760 yards = 5,280 feet	1 kilometer = 1000 meters
1 acre = 43,560 square feet	
1 cup = 8 fluid ounces	1 liter = 1000 milliliters = 1000 cubic centimeters
1 pint = 2 cups	1 gram = 1000 milligrams
1 quart = 2 pints	1 kilogram = 1000 grams
1 gallon = 4 quarts	
1 pound = 16 ounces	1 minute = 60 seconds
1 ton = 2,000 pounds	1 hour = 60 minutes
	1 year = 52 weeks = 365 days

## Conversions between Systems of Measure

When converting from Customary to Metric, use these approximations.

1 inch = 2.54 centimeters	1 cup = 0.24 liter
1 foot = 0.305 meter	1 gallon = 3.785 liters
1 mile = 1.61 kilometers	1 ounce = 28.35 grams
	1 pound = 0.454 kilogram

When converting from Metric to Customary, use these approximations.

1 centimeter = 0.39 inch	1 liter = 4.23 cups
1 meter = 3.28 feet	1 liter = 0.264 gallon
1 kilometer = 0.62 mile	1 gram = 0.0352 ounce
	1 kilogram = 2.204 pounds

## Temperature conversions between Celsius and Fahrenheit

$$\begin{aligned}\text{°C} &= (\text{°F} - 32) \div 1.8 \\ \text{°F} &= (\text{°C} \times 1.8) + 32\end{aligned}$$