

# Mathematics Reference Page

## Abbreviations for Geometric Formulas

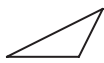
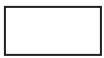

$A$ = area	$d$ = diameter	$r$ = radius
$B$ = area of base	$h$ = height	$s$ = length of side
$b$ = base	$\ell$ = length	$V$ = volume
$C$ = circumference	$P$ = perimeter	$w$ = width

## Perimeter ( $P$ ) and Circumference ( $C$ )

Any Polygon:	$P$ = sum of side lengths
Rectangle:	$P = 2\ell + 2w$
Circle:	$C = 2\pi r$ or $\pi d$
	$\pi \approx 3.14$ or $\frac{22}{7}$

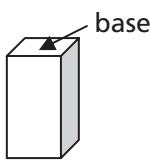

## Plane Figures

## Area ( $A$ )

Triangle:		$A = \frac{1}{2}bh$
Rectangle:		$A = \ell w$
Circle:		$A = \pi r^2$
		$\pi \approx 3.14$ or $\frac{22}{7}$

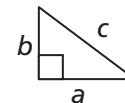
## Solid Figures

## Volume ( $V$ )

Right Rectangular Prism		$V = Bh$ or $V = \ell wh$
Cube		$V = s^3$

## Algebraic Formulas and Equations

$d = rt$	distance = rate $\times$ time
Distance Formula	$d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$
	$d$ = distance between two points
Midpoint Formula:	$\left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2}\right)$
Slope Formula:	$m = \frac{y_2 - y_1}{x_2 - x_1}$
Standard Form of a Linear Equation:	$Ax + By = C$
Slope-Intercept Equation:	$y = mx + b$
Point-Slope Equation:	$y - y_1 = m(x - x_1)$
Pythagorean Theorem:	$a^2 + b^2 = c^2$



## Quadratics

For $ax^2 + bx + c = 0$ :	$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$
Discriminant:	$b^2 - 4ac$

## Measurement Conversions

### LENGTH

1 foot (ft) = 12 inches (in.)
1 yard (yd) = 3 feet
1 yard = 36 inches
1 mile = 1,760 yards
1 mile = 5,280 feet

### CAPACITY

1 cup (c) = 8 fluid ounces (fl oz)
1 pint (pt) = 2 cups
1 quart (qt) = 2 pints
1 quart = 4 cups
1 gallon (gal) = 4 quarts

### WEIGHT

1 pound (lb) = 16 ounces (oz)
1 ton (T) = 2,000 pounds

### CONVERSION BETWEEN CUSTOMARY AND METRIC MEASUREMENT

1 yard = 0.9144 m	1 quart = 0.946 L
1 foot = 0.3048 m	1 ounce = 28.35 g
1 inch = 2.54 cm	1 lb = 0.45 kg