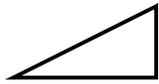
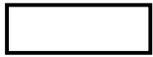

Mathematics Reference Sheet

Area



Triangle

$$A = \frac{1}{2}bh$$



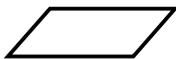
Rectangle

$$A = \ell w$$



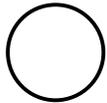
Trapezoid

$$A = \frac{1}{2}h(b_1 + b_2)$$



Parallelogram

$$A = bh$$



Circle

$$A = \pi r^2$$

KEY	
b = base	d = diameter
h = height	r = radius
ℓ = length	A = area
w = width	C = circumference
S.A. = surface area	V = volume
	B = area of base

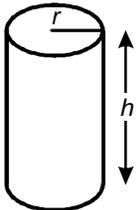
Use 3.14 or $\frac{22}{7}$ for π

Circumference

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

Surface Area

1. Surface area of a prism or pyramid equals the sum of the areas of all faces.
2. Surface area of a cylinder equals the sum of the areas of the bases and the area of its rectangular wrap.

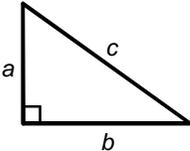


$$S.A. = 2(\pi r^2) + 2(\pi r)h$$

3. Surface area of a sphere: $S.A. = 4\pi r^2$

Volume

1. Volume of a prism or cylinder equals the Area of the Base (B) times the height (h).
 $V = Bh$
2. Volume of a pyramid or cone equals $\frac{1}{3}$ times the Area of the Base (B) times the height (h).
 $V = \frac{1}{3} Bh$
3. Volume of a sphere: $V = \frac{4}{3} \pi r^3$

<p>Pythagorean theorem: $a^2 + b^2 = c^2$</p> 	<p>Given a line containing points (x_1, y_1) and (x_2, y_2)</p> <ul style="list-style-type: none"> • Slope of line $\frac{y_2 - y_1}{x_2 - x_1}$ • Distance between two points $\sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$ • Midpoint between two points $\left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2} \right)$
<p>Simple interest formula: $I = prt$</p> <p>I = simple interest, p = principal, r = rate, t = time.</p>	
<p>Distance formula: $d = rt$</p> <p>d = distance, r = rate, t = time.</p>	

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 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

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

Metric numbers with four digits are presented without a comma (e.g., 9960 kilometers). For metric numbers greater than four digits, a space is used instead of a comma (e.g., 12 500 liters).