Geometric Formulas

Perimeter and Area of a Triangle, and
Sum of the Measures of the Angles

\[ P = a + b + c \]
\[ A = \frac{1}{2}bh \]
\[ A + B + C = 180^\circ \]

Pythagorean Theorem

\[ a^2 + b^2 = c^2 \]

Perimeter and Area of a Rectangle

\[ P = 2L + 2W \]
\[ A = LW \]

Perimeter and Area of a Square

\[ P = 4s \]
\[ A = s^2 \]

Area of a Trapezoid

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

Circumference and Area of a Circle

\[ C = 2\pi r \]
\[ A = \pi r^2 \]

Volume and Surface Area of a Rectangular Solid

\[ V = LWH \]
\[ SA = 2LW + 2LH + 2WH \]

Volume and Surface Area of a Sphere

\[ V = \frac{4}{3}\pi r^3 \]
\[ SA = 4\pi r^2 \]

Volume and Surface Area of a Right Circular Cylinder

\[ V = \pi r^2h \]
\[ SA = 2\pi r^2 + 2\pi rh \]
**Metric-U.S. Conversion**

### Length
- 1 meter = 3.28 feet
- 1 meter = 1.094 yards
- 1 centimeter = 0.394 inches
- 1 kilometer = 0.6214 miles
- 1 foot = 0.305 meters
- 1 yard = 0.914 meters
- 1 inch = 2.54 centimeters
- 1 mile = 1.6093 kilometers

### Weight
- 1 gram = 0.03527 ounces
- 1 kilogram = 2.205 pounds
- 1 gram = 0.002205 pounds
- 1 ounce = 28.35 grams
- 1 pound = 0.454 kilograms
- 1 pound = 454 grams

### Volume
- 1 liter = 1.057 quarts
- 1 liter = 0.2642 gallons
- 1 quart = 0.946 liters
- 1 gallon = 3.785 liters

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**U.S. System of Measurement**

### Length
- 1 foot = 12 inches
- 1 yard = 3 feet
- 1 mile = 5280 feet

### Weight
- 1 pound = 16 ounces
- 1 ton = 2000 pounds

### Volume
- 1 cup = 8 fluid ounces
- 1 pint = 2 cups
- 1 quart = 2 pints
- 1 gallon = 4 quarts

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**Metric System of Measurement**

### Prefixes

<table>
<thead>
<tr>
<th>Prefix</th>
<th>Meaning</th>
<th>Length</th>
<th>Mass</th>
<th>Volume</th>
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<tbody>
<tr>
<td>kilo-</td>
<td>1000</td>
<td>1 km (km) = 1000 meters (m)</td>
<td>1 kilogram (kg) = 1000 grams (g)</td>
<td>1 kiloliter (kl) = 1000 liters (l)</td>
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<tr>
<td>hecto-</td>
<td>100</td>
<td>1 hm (hm) = 100 m</td>
<td>1 hectogram (hg) = 100 g</td>
<td>1 hectoliter (hl) = 100 g</td>
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<tr>
<td>deka-</td>
<td>10</td>
<td>1 dam (dam) = 10 m</td>
<td>1 dekagram (dag) = 10 g</td>
<td>1 dekaliter (dal) = 10 g</td>
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<td>$\frac{1}{10}$ = 0.1</td>
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<td></td>
<td></td>
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<td>centi-</td>
<td>$\frac{1}{100}$ = 0.01</td>
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<td>milli-</td>
<td>$\frac{1}{1000}$ = 0.001</td>
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### Temperature
- Celsius (C) to Fahrenheit (F): $F = \frac{9}{5}C + 32$
- Fahrenheit (F) to Celsius (C): $C = \frac{5}{9}(F - 32)$