

Measures and Formulas

Metric Units

| | | | | | | |
|-------------------|--------------------|--------------------|----------------------|-------------------|--------------------|--------------------|
| kilometre (km) | hectometre (hm) | decametre (dam) | metre (m) | decimetre (dm) | centimetre (cm) | millimetre (mm) |
|-------------------|--------------------|--------------------|----------------------|-------------------|--------------------|--------------------|

metric units of area: 1 hectare (ha) = 10,000 square metres (m²)

| | | | | | | |
|--------------------|-------------------|-------------------|---------------------|------------------|-------------------|----------------------|
| kilogram * (kg) | hectogram (hg) | decagram (dag) | gram (g) | decigram (dg) | centigram (cg) | milligram ** (mg) |
|--------------------|-------------------|-------------------|---------------------|------------------|-------------------|----------------------|

* 1 metric tonne (t) = 1000 kilograms

** 1 milligram = 1000 micrograms (mcg or µg)

| | | | | | | |
|-------------------|--------------------|--------------------|----------------------|-------------------|--------------------|------------------------|
| kilolitre (kL) | hectolitre (hL) | decalitre (daL) | litre (L) | decilitre (dL) | centilitre (cL) | millilitre *** (mL) |
|-------------------|--------------------|--------------------|----------------------|-------------------|--------------------|------------------------|

1 cubic metre (m³) = 1000 litres (L)

*** 1 millilitre (mL) = 1 cubic centimetre (cm³ or cc)

Imperial & American Units and Conversions to Metric

| length and distance | weight and mass | capacity | time and temperature |
|------------------------------|----------------------------|--|----------------------------------|
| 1 mile (mi) = 5280 feet (ft) | 1 ton(T) = 2000 pounds(lb) | 1 gallon (gal) = 4 quarts (qt) | 1 year (yr) = 365.25 days |
| 1 foot = 12 inches (in) | 1 pound = 16 ounces (oz) | 1 quart = 2 pints (pt) | 1 week (wk) = 7 days |
| 1 yard (yd) = 3 ft = 36 in | | 1 pint = 2 cups | 1 day = 24 hours (hr) |
| | | 1 cup = 8 fluid ounces (fl oz) | 1 hour = 60 minutes (min) |
| | | 1 fl oz = 2 tablespoons (tbs) | 1 min = 60 seconds (sec) |
| | | 1 tbs = 3 teaspoons (tsp) | |
| | | 1 ft ³ = 7.49 US gal = 6.24 Imp gal | |
| | | | |
| 1 inch = 2.54 cm = 25.4 mm | 1 ounce = 28.35 grams | 1 teaspoon ≈ 5 mL | $F = \frac{9}{5} \cdot C + 32$ |
| 1 centimetre = 0.394 inches | 1 pound = 453.59 grams | 1 tablespoon ≈ 15 mL | $C = \frac{5}{9} \cdot (F - 32)$ |
| 1 foot = 0.305 metres | 1 pound = 0.454 kilograms | 1 US fluid ounce = 29.57 mL | |
| 1 metre = 3.281 feet | 1 kilogram = 2.205 pounds | 1 US quart = 0.946 L | |
| 1 yard = 0.914 metres | 1 metric tonne = 2205 lb | 1 litre = 1.057 US qt | |
| 1 metre = 1.094 yards | | 1 US gallon = 3.785 litres | |
| 1 mile = 1.609 kilometres | | 1 litre = 0.264 US gallons | |
| 1 kilometre = 0.621 miles | | 1 Imp gallon = 4.546 litres | |
| | | 1 litre = 0.22 Imp gallons | |

units of area: 1 acre = 0.4047 hectare (ha) = 4047 m²; 1 hectare (ha) = 2.471 acres = 10,000 m²

Geometric Formulas (π = 3.14) (more on page 2)

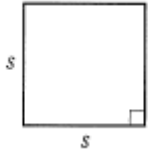
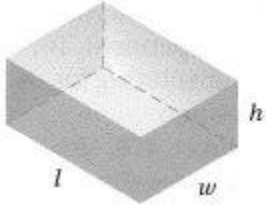
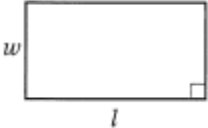
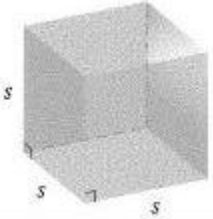
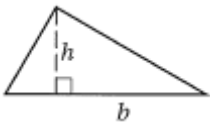

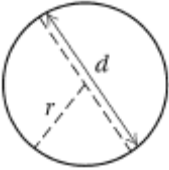
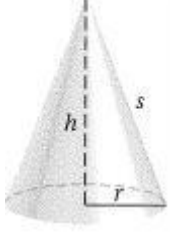
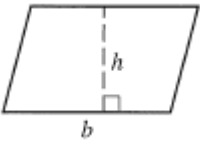

| geometric figure | perimeter | area | volume |
|---------------------|---|---|---|
| square | $P = 4 \cdot s$ | $A = s^2$ | |
| rectangle | $P = 2 \cdot l + 2 \cdot w$ | $A = l \cdot w$ | |
| triangle | | $A = \frac{1}{2} \cdot b \cdot h$ | |
| parallelogram | | $A = b \cdot h$ | |
| trapezoid | | $A = \frac{1}{2} \cdot h \cdot (a + b)$ | |
| circle | $C = \pi \cdot d = 2 \cdot \pi \cdot r$ | $A = \pi \cdot r^2$ | |
| surface area | | | |
| rectangular solid | | $S = 2 \cdot l \cdot w + 2 \cdot l \cdot h + 2 \cdot w \cdot h$ | $V = l \cdot w \cdot h$ |
| cylinder | | $S = 2 \cdot \pi \cdot r \cdot h + 2 \cdot \pi \cdot r^2$ | $V = \pi \cdot r^2 \cdot h$ |
| sphere | | $S = 4 \cdot \pi \cdot r^2$ | $V = \frac{4}{3} \cdot \pi \cdot r^3$ |
| cone | | $S = \pi \cdot r^2 + \pi \cdot r \cdot s$ | $V = \frac{1}{3} \cdot \pi \cdot r^2 \cdot h$ |

Interest Formulas simple: $I = P \cdot r \cdot t$ compound: $A = P \cdot \left(1 + \frac{r}{n}\right)^{nt}$

Geometric Formulas

Plane Geometry

Solid Geometry

| | | | |
|---|---|---|---|
| <p>Square Area: $A = s^2$ Perimeter: $P = 4 \cdot s$</p> |  | <p>Rectangular Solid Volume: $V = l \cdot w \cdot h$ Surface Area: $S = 2 \cdot l \cdot w + 2 \cdot l \cdot h + 2 \cdot w \cdot h$</p> |  |
| <p>Rectangle Area: $A = l \cdot w$ Perimeter: $P = 2 \cdot l + 2 \cdot w$</p> |  | <p>Cube Volume: $V = s^3$ Surface Area: $S = 6 \cdot s^2$</p> |  |
| <p>Triangle Area: $A = \frac{1}{2} \cdot b \cdot h$</p> |  | <p>Circular Cylinder Volume: $V = \pi \cdot r^2 \cdot h$ Surface Area: $S = 2 \cdot \pi \cdot r \cdot h + 2 \cdot \pi \cdot r^2$</p> |  |
| <p>Circle Area: $A = \pi \cdot r^2$ Circumference: $C = \pi \cdot d = 2 \cdot \pi \cdot r$</p> |  | <p>Circular Cone Volume: $V = \frac{1}{3} \cdot \pi \cdot r^2 \cdot h$ Surface Area: $S = \pi \cdot r^2 + \pi \cdot r \cdot s$</p> |  |
| <p>Parallelogram Area: $A = b \cdot h$</p> |  | <p>Sphere Volume: $V = \frac{4}{3} \cdot \pi \cdot r^3$ Surface Area: $S = 4 \cdot \pi \cdot r^2$</p> |  |