Charts and Formulas

Metric Units

Length	Area	Volume	Capacity	Mass
kilometre (km) 1 km = 1000 m	square kilometre (km²) 1 km² = 1 000 000 m² 1 km² = 100 ha	cubic kilometre (km³) 1 km³ = 1 000 000 000 m³	kilolitre (kL) 1 kL = 1000 L	kilogram (kg) 1 kg = 1000 g 1000 kg = 1 t
hectometre (hm) 1 hm = 100 m	square hectometre (hm²) 1 hectare (ha) = 1 hm² 1 ha = 10 000 m²	cubic hectometre (hm³) 1 hm³ = 1 000 000 m³	hectolitre (hL) 1 hL = 100 L	hectogram (hg) 1 hg = 100 g
decametre (dam) 1 dam = 10 m	square decametre (dam²) 1 dam² = 100 m²	cubic decametre (dam³) 1 dam³ = 1000 m³	decalitre (daL) 1 daL = 10 L	decagram (dag) 1 dag = 10 g
metre (m) 1 m = 100 cm	square metre (m²) 1 m² = 10 000 cm²	cubic metre (m³) 1 m³ = 1 000 000 cm³	litre (L) 1 L = 1000 mL	gram (g) 1 g = 1000 mg
decimetre (dm) 1 dm = 0.1 m	square decimetre (dm²) 1 dm² = 0.01 m²	cubic decimetre (dm³) 1 dm³ = 0.001 m³	decilitre (dL) 1 dL = 0.1 L	decigram (dg) 1 dg = 0.1 g
centimetre (cm) 1 cm = 0.01 m 1 cm = 10 mm	square centimetre (cm²) 1 cm² = 0.0001 m²	cubic centimetre (cm³) 1 cm³ = 0.000 001 m³ Note: 1 cm³ holds 1 mL	centilitre (cL) 1 cL = 0.01 L	centigram (cg) 1 cg = 0.01 g
millimetre (mm) 1 mm = 0.001 m	square millimetre (mm²) 1 mm² = 0.000 001 m²	cubic millimetre (mm³) 1 mm³ = 0.000 000 001 m³	millilitre (mL) 1 mL = 0.001 L	milligram (mg) 1 mg = 0.001 g

Imperial Units

Length	Area	Volume	Capacity	Mass
inch (in. or ″)	square inches (sq in.)	cubic inches (cu in.)	tablespoon (T)	ounces (oz)
foot (ft or ′) 1 foot = 12 inches	square feet (sq ft) 1 sq ft = 144 sq in.	cubic feet (cu ft) 1 cu ft = 1728 cu in.	fluid ounce (fl oz) 1 fl oz = 2 T	pound (lb) 1 lb = 16 oz
yard (yd) 1 yard = 3 feet	square yard (sq yd) 1 sq yd = 9 sq ft	cubic yard (cu yd) 1 cu yd = 27 cu ft	cup (c) 1 c = 8 fl oz (US) 1 c = 10 fl oz (UK)	ton (T) 1 T = 2000 lb (US) 1 T = 2240 lb (UK)
mile (mi) 1 mile = 1760 yd	square mile (sq mi) 1 sq mi = 3 097 600 sq yd	cubic mile (cu mi)	pint (pt) 1 pt = 2 c	
	1 acre = 4840 sq yd		quart (qt) 1 qt = 2 pt	
			gallon (gal) 1 gal = 4 qt	

Converting Common Imperial Units to Metric (SI)

Linear	Area	Volume	Capacity	Mass
1 in. $\doteq$ 2.54 cm	1 sq in $\doteq$ 6.4516 cm²	1 cu in. $\doteq$ 16.39 cm³	1 fl oz $\doteq$ 29.57 mL	1 oz $\doteq$ 28.35 g
1 ft $\doteq$ 0.31 m	1 sq ft $\doteq$ 0.0929 m²	1 cu ft $\doteq$ 28.32 dm³	1 pt $\doteq$ 0.47 L, or 470 mL	1 lb $\doteq$ 0.45 kg
1 yd $\doteq$ 0.91 m	1 sq yd $\doteq$ 0.8361 m²	1 cu yd $\doteq$ 0.76 m³	1 qt $\doteq$ 0.95 L, or 950 mL	1 T $\doteq$ 0.91 t
1 mi $\doteq$ 1.61 km	1 sq mi $\doteq$ 2.5900 km²	1 cu mi $\doteq$ 4.17 km³	1 gal $\doteq$ 3.79 L, or 3790 mL	
	1 acre $\doteq$ 0.4047 ha			

Converting Common Metric (SI) Units to Imperial

Linear	Area	Volume	Capacity	Mass
1 mm $\doteq$ 0.039 in.			1 mL $\doteq$ 0.03 fl oz	
1 cm $\doteq$ 0.39 in.	1 cm² $\doteq$ 0.1550 sq in.	1 cm³ $\doteq$ 0.06 cu in.		
1 m $\doteq$ 1.09 yd	1 m² $\doteq$ 10.7639 sq ft	1 m³ $\doteq$ 1.31 cu yd	1 L $\doteq$ 2.11 pt	1 g $\doteq$ 0.04 oz
1 m $\doteq$ 3.27 ft			1 L $\doteq$ 1.06 qt	1 kg $\doteq$ 2.21 lb
1 km $\doteq$ 0.62 mi	1 km² $\doteq$ 0.3861 sq mi	1 km³ $\doteq$ 0.24 cu mi	1 L $\doteq$ 0.26 gal	1 t $\doteq$ 1.10 T

Temperature

$$F = \frac{9}{5}C + 32$$

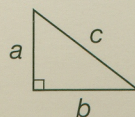$$C = \frac{5}{9}(F - 32)$$

Circle Formulas

Diameter = radius × 2
Circumference
  = π × diameter
Circumference
  = π × radius × 2
Area: $\pi \times r^2$

Pythagorean theorem

$a^2 + b^2 = c^2$, where a and b are sides adjacent to the right angle in a right triangle and c is the hypotenuse

Primary Trigonometric Relationships

$$\sin A° = \frac{\text{opposite side of } A°}{\text{hypotenuse}}$$

$$\cos A° = \frac{\text{adjacent side of } A°}{\text{hypotenuse}}$$

$$\tan A° = \frac{\text{opposite side of } A°}{\text{adjacent side of } A°}$$