

U.S. Weights & Measures

Length

Standard Unit: inch (in. or ")
 12 inches = 1 foot (ft or ')
 3 feet = 1 yard (yd)
 5 ½ yards or 16 ½ feet = 1 rod (rd)
 5,280 feet = 1 mile (mi)

Weight

Standard unit: Pound (lb)
 16 ounces (oz) = 1 pound
 2,000 pounds = 1 ton

Volume

Liquid
 3 teaspoons (tsp) = 1 tablespoon (tbs)
 16 tablespoons = 1 cup
 2 cups = 1 pint (pt)
 16 fluid ounces (fl oz) = 1 pint (pt)
 2 pints = 1 quart (qt)
 4 quarts = 1 gallon

Dry
 2 pints (pt) = 1 quart (qt)
 8 quarts = 1 peck (pk)
 4 pecks = 1 bushel (bu)

Metric System Prefixes

<u>Multiple of Submultiple* Decimal Form</u>	<u>Power of 10</u>	<u>Prefix</u>	<u>Prefix Symbol</u>	<u>Meaning</u>
1,000,000,000,000	10 ¹²	tera	T	one trillion times
1,000,000,000	10 ⁹	giga	G	one billion times
1,000,000	10 ⁶	mega	M	one million times
1,000	10 ³	kilo**	k	one thousand times
100	10 ²	hecto	h	one hundred times
10	10 ¹	deka	da	ten times
0.1	10 ⁻¹	deci	d	one tenth of
0.01	10 ⁻²	centi**	c	one hundredth of
0.001	10 ⁻³	milli**	m	one thousandth of
0.000001	10 ⁻⁶	micro	μ	one millionth of
0.000000001	10 ⁻⁹	nano	n	one billionth of
0.000000000001	10 ⁻¹²	pico	p	one trillionth of

* = Factor by which the unit is multiplied.

** = Most commonly used prefixes.

As an example, the prefixes are used below with the metric standard unit of length, metre (m).

1 terametre (Tm) = 1,000,000,000,000 m	1 m = 0.000000000001 Tm
1 gigametre (Gm) = 1,000,000,000 m	1 m = 0.000000001 Gm
1 megametre (Mm) = 1,000,000 m	1 m = 0.000001 Mm
1 kilometre (km) = 1,000 m	1 m = 0.001 km
1 hectometre (hm) = 100 m	1 m = 0.01 hm
1 dekametre (dam) = 10 m	1 m = 0.1 dam
1 decimetre (dm) = 0.1 m	1 m = 10 dm
1 centimetre (cm) = 0.01 m	1 m = 100 cm
1 millimetre (mm) = 0.001 m	1 m = 1,000 mm
1 micrometre (μm) = 0.000001 m	1 m = 1,000,000 μm
1 nanometre (nm) = 0.000000001 m	1 m = 1,000,000,000 nm
1 picometre (pm) = 0.000000000001 m	1 m = 1,000,000,000,000 pm

Metric & U.S. Conversion

Length		Weight		Capacity	
U.S.	Metric	U.S.	Metric	U.S.	Metric
1 inch (in.) = 2.54 cm		1 ounce (oz) = 28.3 g		1 gallon (gal) = 3.79 L	
1 foot (ft) = 30.5 cm		1 pound (lb) = 454 g		1 quart (qt) = 0.946 L	
1 yard (yd) = 91.4 cm		1 lb = 0.454 kg		0.264 gal = 1 L	
1 mile (mi) = 1,610 m		0.0353 oz = 1 g		1.06 qt = 1 L	
1 mi = 1.61 km		0.00220 lb = 1 g		1 metric ton = 1,000 kg	
0.0394 in. = 1 mm		2.20 lb = 1 kg			
0.394 in. = 1 cm					
39.4 in. = 1 m					
3.28 ft = 1 m					
1.09 yd = 1 m					
0.621 mi = 1 km					

Area

U.S.	U.S.	Metric	Metric	U.S.
1 ft ² = 144 in ²	1 in ² = 6.45 cm ²			1 m ² = 10.76 ft ²
1 yd ² = 9 ft ²	= 645 mm ²			= 1,550 in ²
1 rd ² = 30.25 yd ²	1 ft ² = 929 cm ²			= 0.0395 rd ²
1 acre = 160 rd ²	= 0.0929 m ²			= 1.196 yd ²
= 4,840 yd ²	1 yd ² = 8,361 cm ²			1 cm ² = 0.155 in ²
= 43,560 ft ²	= 0.8361 m ²			1 km ² = 247 acres
1 mi ² = 640 acres	1 rd ² = 25.3 m ²			= 1.08 x 10 ⁷ ft ²
= 1 section	1 acre = 4,047 m ²			= 0.386 mi ²
Metric	= 0.004047 km ²			1 ha = 2.47 acres
1 m ² = 10,000 cm ² or 10 ⁴ cm ²	= 0.4047 ha			
= 1,000,000 mm ² or 10 ⁶ mm ²	1 mi ² = 2.59 km ²			
1 cm ² = 100 mm ²				
= 0.0001 m ²				
1 km ² = 1,000,000 m ²				
1 hectare (ha) = 10,000 m ²				
= 1 hm ²				

Volume

U.S.	U.S.	Metric	Metric	U.S.
1 ft ³ = 1,728 in ³	1 in ³ = 16.39 cm ³			1 cm ³ = 0.06102 in ³
1 yd ³ = 27 ft ³	1 ft ³ = 28,317 cm ³			1 m ³ = 35.3 ft ³
	= 0.028317 m ³			= 1.31 yd ³
	1 yd ³ = 0.7646 m ³			
Metric				
1 m ³ = 10 ⁶ cm ³				
1 cm ³ = 10 ⁻⁶ m ³				
= 10 ³ mm ³				
1 cm ³ = 1 mL				

Temperature

$$C = \frac{5}{9}(F - 32^{\circ}) \quad F = \frac{9}{5}C + 32^{\circ}$$

Formulas from Geometry

	Perimeter	Area		Volume	Lateral Surface Area
Rectangle	$P = 2(b + h)$	$A = bh$	Prism	$V = bh$	
Square	$P = 4b$	$A = b^2$	Cylinder	$V = \pi r^2 h$	$A = 2\pi rh$
Parallelogram	$P = 2(a + b)$	$A = bh$	Pyramid	$V = \frac{1}{3}bh$	
Rhombus	$P = 4b$	$A = bh$	Cone	$V = \frac{1}{3}\pi r^2 h$	$A = \pi rs$
Trapezoid	$P = a + b + c + d$	$A = \frac{(a + b)h}{2}$	Sphere	$V = \frac{4}{3}\pi r^3$	$A = 4\pi r^2$
Triangle	$P = a + b + c$	$A = \frac{1}{2}bh$			
Circle	$C = 2\pi r$	$A = \pi r^2$			
	$C = \pi d$				