Unit Conversion Table

Conversions from inside front cover of <u>Thinking Like An Engineering – An Active Learning Approach</u> by Stephan. A few additional conversion factors have been added. The conversion table for Temperature has been removed as it is misleading.

Angle

1 rad	= 57.3 deg
π deg	**= 180 deg**

Area

1 acre	= 4047 m^2
	= 0.00156 mi^2

Energy

1 J	= 0.225 lb$_f$
	= 9.48 x 10^{-4} BTU
	= 0.7376 ft·lb$_f$
1 kW·h	**= 3,600,000 J**

Force

1 N	= 0.225 lb$_f$
	= 1 x 10^5 dyne
1 kip	**= 1,000 lb$_f$**

Length

1 m	= 3.28 ft
1 km	= 0.621 mi
1 in	**= 2.54 cm**
1 mi	**= 5280 ft**
1 yd	**= 3 ft**

Mass

1 kg	= 2.205 lb$_m$
1 slug	= 32.2 lb$_m$
1 ton	**= 2,000 lb$_m$**

Power

1 W	= 3.412 BTU/h
	= 0.00134 hp
	= 14.34 cal/min
	= 0.7376 ft·lb$_f$/s

Pressure

1 atm	= 1.01325 bar
	= 33.9 ft H$_2$O
	= 29.92 in Hg
	= 760 mm Hg
	= 101,325 Pa
	= 14.7 psi

Time

1 d	**= 24 h**
1 h	**= 60 min**
1 min	**= 60 s**
1 yr	= 365 day

Volume

1 L	= 0.264 gal
	= 0.0353 ft^3
	= 33.8 fl oz
1 mL	= 1 cm^3 = 1 cc
1 gal	**= 4 quarts**
	= 128 fl oz
1 quart	**= 2 pints**
1 pint	**= 2 cups**
1 cup	**= 16 tablespoons**
1 tablespoon	**= 3 teaspoons**

Conversions shown in bold text above indicate exact conversions

Named (derived) Units

1 cP	= 0.01 g/(cm·s)
1 F	= 1 A·s/V
1 H	= 1 V·s/A
1 Hz	= 1 s^{-1}

1 J	= 1 N·m
1 N	= 1 kg·m/s^2
1 Pa	= 1 N/m^2
1 St	= 1 cm^2/s

1 V	= 1 W/A
1 W	= 1 J/s
1 Ω	= 1 V/A