Engineering Units Conversion

Quantity	Also Equals	Equal to	SI Unit, comments
Length			**meter (m)**
1 mm		.03937 in.	*exact by definition* in USA until 1959
1 inch (in)		25.4 mm	*exact by definition* in UK since 1933, and USA since 1959
1 foot (ft)	12 in	.3048 m	*exact*
1 yard (yd)	3 ft	.9144 m	*exact*
1 meter		3.28084 ft	
1 mile	1760 yards	1.609344 km	*exact*
1 nautical mile		1852 m	*exact by definition*
Area			**square meter (m^2)**
1 sq.inch		645.16 mm^2	*exact*
1 dm^2		15.500031 sq.inch	
1 sq.foot		.0929034 m^2	*exact*
1 sq.yard		.83612736 m^2	*exact*
Volume			**cubic meter (m^3)**
1 cm^3		.06102 cu.in.	
1 cu.in		16.387064 cm^3	*exact*
1 cu.foot		28.317 liters	
1 US pint		.473176 liter	

1 imperial pint		.56825 liter	
1 liter	1 dm^3	.264172 US gallon	
1 US gallon (liquid)	8 US pints, 231 cu.in	3.785411784 liters	*exact*
1 imperial gallon	8 imp. pints (10 lbs of water)	4.54609 liters	
Mass			**kilogram (kg)**
1 ounce (oz)		28.349523 grams	
1 pound (lb)	16 ounces	.45359237 kg	*exact*
1 kg		2.20462 pounds	*(Originally the mass of 1 dm^3 [liter] of water at a certain temperature; Now the mass of a prototype in Paris)*
Density			**kilogram per cubic meter (kg/m^3)**
1 g/cm^3		1.730 ounces per cu.in	(for most materials)
1 g/dm^3		.06243 pounds per cu.ft	(for balsa)
Surface Weight			**kilogram per square meter**
1 oz. per sq.yd		33.906 g/m^2	(The units we use for covering materials)
1 g/m^2		.0295 oz. per sq.yd	
Speed			**meter per second (m/s)**
1 km/h		.62137 mph	
1 mph		1.609344 km/h	
1 mph		.44704 m/s	
1 m/s		3.6 km/h	
1 m/s		2.236932 mph	

Mach 1	speed of sound	1225.1 km/h @ 15 °C	
c	speed of light in vacuum	299792458 m/s	*exact by definition*
Pressure, Stress			**pascal (Pa) = Newton per square meter (N/m^2)**
1 torr	1 mm Hg	133 Pa	
1 psi		6894.757 Pa	
1 bar	100 000 Pa	14.504 psi	
1 kgf/cm^2		98 066.5 Pa	
1 atmosphere	101325 Pa		*exact by definition*
1 atmosphere	760 torr	14.696 psi	
Force			**Newton (N)**
1 N		.1019716 kgf	
1 N		.2248 pound force	
Energy			**joule (J) = Newtonmeter (Nm) = Wattsecond (Ws)**
1 foot pound (ft-lb)		1.355 818 J	
1 kJ	1 kWs	.9478 BTU	
Power			**watt (W) = Joule per second (J/s)**
1 horsepower (hp)	1980000 ft-lbs per hr	745.70 W	
1 metric hp	75 kgm/s	735.5 W	
1 BTU/sec	1054.118 W		

Temperature	Conversion Formula	Kelvin (K) or degree Celsius (°C)
{°F}	{°F} = {°C} * 9 / 5 + 32	
{°C}	{°C} = ({°F} - 32) * 5 / 9	
{K}	{K} = {°C} + 273.15	