Do not write on this sheet, so that it can be used for a test.

Conversion Table

* Denotes that it should be memorized as given in parentheses.

Weight

* 1 lb = 16 oz
* 1 kg ≈ 2.2046 (2.2) lb
* 1 oz ≈ 28.35 g

1 g ≈ 0.0353 oz

1 lb ≈ 0.4536 kg

* 1 U.S. ton = 2000 lb
* 1 metric ton = 1000 kg

Volume

* 1 tablespoon = 3 teaspoons
* 1 fl oz = 2 tablespoons
* 1 cup = 8 fl oz
* 1 pt = 2 cups = 16 fl oz
* 1 qt = 2 pt = 32 fl oz
* 1 gal = 4 qt = 128 fl oz ≈ 3.785 ℓ
* 1 mℓ = 1cm^3 (exactly!)
* 1 ℓ ≈ 1.0567 (1.06) qt ≈ 33.8 fl oz

1 fl oz ≈ 29.58 mℓ ≈ 1.804 in^3

1 qt ≈ 57.75 in^3 ≈ 0.9464 ℓ

1 gal ≈ 231.0 in^3 ≈ 0.134 ft^3

1 ft^3 = 1728 in^3 ≈ 7.481 gal

1 in^3 ≈ 0.554 fl oz ≈ 16.39 cm^3

1 m^3 = 1000 ℓ ≈ 35.31 ft^3

1 cord (of wood) = 128 ft^3

Area

* 1 acre ≈ area of square with side of 70 yards
* 1 hectare = 10,000 m^2 (100m·100m) ≈ 2.471 acres

1 acre = 4840 yd^2 ≈ 0.405 hectare

1 mile^2 = 640 acres ≈ 2.590 km^2

1 ft^2 = 144 in^2

1 m^2 = 10,000 cm^2 ≈ 10.764 ft^2

1 in^2 ≈ 6.452 cm^2

Length

* 1 yd = 36 in
* 1 in ≈ 2.5400 (2.54) cm
* 1 m ≈ 3.2808 (3.28) ft
* 1 mile = 5280 ft ≈ 1.6093 (1.61) km
* 1 km ≈ 0.6214 (0.62) mi

1 cm ≈ 0.39370 in

1 m ≈ 39.370 in ≈ 1.093yd

1 ft ≈ 0.3048m

Speed

1 m/s = 3.6 km/h ≈ 2.237 mph ≈ 3.281 ft/sec

Density[1]

Density conversion factors:

$$1\,\frac{g}{cm^3} = 1000\,\frac{kg}{m^3} \approx 62.43\,\frac{lb}{ft^3} \approx 0.578\,\frac{oz}{in^3}$$

$$1\,\frac{oz}{in^3} \approx 1.73\,\frac{g}{cm^3}$$

Water[1] (at a maximum density of 4°C)

$$= 1\,\frac{g}{cm^3} \text{ or } 1\,\frac{kg}{liter} \text{ or } 1000\,\frac{kg}{m^3}$$

$$\approx 0.578\,\frac{oz}{in^3} \text{ or } 1.043\,\frac{oz}{fl\ oz}$$

$$\approx 62.43\,\frac{lb}{ft^3} \text{ or } 8.345\,\frac{lb}{gal}$$

Air	$1.29\,\frac{oz}{ft^3}$	or $1.29\,\frac{kg}{m^3}$ (coincidentally!)
Aluminum	$169\,\frac{lb}{ft^3}$	or $2.70\,\frac{g}{cm^3}$
Iron	$443\,\frac{lb}{ft^3}$	or $7.10\,\frac{g}{cm^3}$
Mercury	$843\,\frac{lb}{ft^3}$	or $13.5\,\frac{g}{cm^3}$
Gold	$1204\,\frac{lb}{ft^3}$	or $19.3\,\frac{g}{cm^3}$

Useful Distances

Radius of the Earth:	3960 mi (6371 km)
Circumference of the Earth:	24880 mi (40,030 km)
Surface Area of the Earth:	197,000,000 mi^2 (510,000,000 km^2)
Total land area of the Earth:	57,500,000 mi^2 (149,000,000 km^2)
Radius of the Sun:	432,000 mi (696,000 km)
Radius of the Moon:	1080 mi (1738 km)
Distance to the Moon:	239,000 mi (384,400 km)
Distance to the Sun:	93,000,000 mi (150,000,000 km)
One light year:	5.8784x10^{12} mi (9.46x10^{12} km)
Distance to the nearest star:	2.53x10^{13} mi (4.07x10^{13} km)

Temperature Conversions

$C = {}^5/_9\,(F - 32)$

$F = {}^9/_5\,C + 32$

[1] Density always reads as weight per volume. For example, the density of gold is 1204 lb/ft^3, which tells us that a cubic foot of gold weighs 1204 pounds. The density of gold can also be given as 19.3 g/cm^3, which says that a cubic centimeter weighs 19.3 grams.

- Note that water has a density of exactly 1 oz/fl.oz. at 212°F when it is *least* dense.
- It is perhaps more useful to give densities in terms of g/cm^3 because we can easily compare it to water, which has a density of exactly 1 g/cm^3 (1 cm^3 of water weighs 1 gram). For example, with gold's density of 19.3 g/cm^3, we can say that gold is 19.3 times heavier than water.