

Key

Metric Conversions Worksheet

Conversion statements written as equalities

Terra	1Tm = 1000000000000m	1TL = 1000000000000L	1Ts = 1000000000000s
Giga	1Gm = 1000000000m	1GL = 1000000000L	1Gs = 1000000000s
Mega	1Mm = 1000000m	1ML = 1000000L	1Ms = 1000000s
Kilo	1Km = 1000m	1KL = 1000L	1Ks = 1000s

Base units include meters, liters, joules, gram, seconds, bytes, hertz, ampere or any root

Centi	1m = 100cm	1L = 100cL	1s = 100cs
Milli	1m = 1000mm	1L = 1000mL	1s = 1000ms
Micro	1m = 1000000µm	1L = 1000000µL	1s = 1000000µs
Nano	1m = 1000000000nm	1L = 1000000000nL	1s = 1000000000ns

Other important conversions

Length	Mass to weight	Volume
1 inch = 2.54cm	1 Kg = 2.2 pounds (lbs)	3.78L = 1gallon
1 mile = 1.6 Km		1cm ³ = 1mL
12 inches = 1 ft		
3 ft = 1 yd		
5280 ft = 1 mile		

$$1.033 \text{ Mm} \times \frac{1000000 \text{ m}}{1 \text{ Mm}} \times \frac{1 \text{ Km}}{1000 \text{ m}}$$

1. Convert the following to km:

$$\begin{aligned} 1600.0 \text{ m} &= \underline{1.6 \text{ km}} & 2050 \text{ cm} &= \underline{0.02050 \text{ km}} & 1.033 \text{ Mm} &= \underline{1033 \text{ km}} \\ 245\,565 \text{ mm} &= \underline{0.245565 \text{ km}} & 20\,099 \text{ m} &= \underline{20.099 \text{ km}} & 499 \text{ m} &= \underline{0.499 \text{ km}} \end{aligned}$$

2. Convert the following:

$$\begin{aligned} 10.034 \text{ ms} &= \underline{1.0034} \text{ cs} & 36.45 \text{ cL} &= \underline{364500} \text{ µL} \\ 0.05 \text{ cm} &= \underline{0.5} \text{ mm} & 1202.5 \text{ mL} &= \underline{1.2025} \text{ L} \\ 0.42101 \text{ Gg} &= \underline{421.01} \text{ Mg} & 25.5 \text{ km} &= \underline{25,500} \text{ m} \\ 0.12907 \text{ cm} &= \underline{1.2907} \text{ mm} & 756\,900 \text{ µs} &= \underline{756.900} \text{ ms} \\ 5600.4 \text{ Ms} &= \underline{5.6004} \text{ Gs} & 268\,000 \text{ cm} &= \underline{2.68000} \text{ km} \end{aligned}$$

K H D base l c m . . μ

Metric Conversions Worksheet

Convert the following:

$$0.0075 \text{ Gm} = \underline{7500} \text{ km}$$

$$0.00091 \text{ TL} = \underline{910} \text{ ML}$$

$$0.00046 \text{ ks} = \underline{46} \text{ cs}$$

$$244475.3 \text{ } \mu\text{s} = \underline{0.002444753} \text{ hs}$$

$$4096 \text{ Ms} = \underline{4.096} \text{ Gs}$$

$$210 \text{ hm} = \underline{2100000} \text{ cm}$$

$$0.0002 \text{ } \mu\text{g} = \underline{0.0000002} \text{ mg}$$

$$448.5 \text{ cg} = \underline{4.485} \text{ g}$$

$$0.00034 \text{ } \mu\text{L} = \underline{0.00000034} \text{ cL}$$

$$2103.55 \text{ s} = \underline{2.10355} \text{ ks}$$

$$11120.33 \text{ ng} = \underline{0.001112033} \text{ cg}$$

$$0.0000012 \text{ GL} = \underline{120000} \text{ cL}$$

Word Problems

1. The distance from here to the airport is 0.0000075 Gm. How far is this in km (a quantity that we are more used to talking about)

$$\underline{7.5 \text{ km}}$$

2. There are 10 computers in the computer lab that each have 20 GB hard drives. How many bytes (B) of disk space do we have in the computer lab in total.

$$20 \times 10 = 200 \text{ GB}$$

$$200 \text{ GB} \times \frac{1,000,000,000 \text{ B}}{1 \text{ GB}} = 200,000,000,000 \text{ B}$$

3. A challenge: convert 100125368477004 ng to Teragrams.

$$= 100125.368477004 \text{ g} = 0.000000100125368477004 \text{ Tg}$$