

**WORKSHEET: UNIT CONVERSION PRACTISE**

**Reference**

**Base SI Units:** distance in **m** (meters), time in **s** (seconds), mass in **g** (grams), energy in **J** (Joules)

You can add any prefix to a base SI unit to modify its value.

E.g. grams (g) is the base unit; 1 kilogram (kg) is equal to 1,000 grams.

E.g. second (s) is the base unit; 1 nanosecond (ns) is equal to 0.00000001 seconds.

Prefix	Symbol (capitalization matters!)	Scientific Notation	Meaning	Example
<b>giga-</b>	G	10 <sup>9</sup>	1,000,000,000	1 Gm (gigameter) = 1,000,000,000 m
<b>mega-</b>	M	10 <sup>6</sup>	1,000,000	1 Mm (megameter) = 1,000,000 m
<b>kilo-</b>	k	10 <sup>3</sup>	1,000	1 km (kilometer) = 1,000 m
		10 <sup>0</sup>	1	1 meter = 1 meter
<b>centi-</b>	c	10 <sup>-2</sup>	0.01	1 cm (centimeter) = 0.01 m
<b>milli-</b>	m	10 <sup>-3</sup>	0.001	1 mm (millimeter) = 0.001 m
<b>micro-</b>	μ	10 <sup>-6</sup>	0.000001	1 μm 1 micrometer = 0.000001 m
<b>nano-</b>	n	10 <sup>-9</sup>	0.000000001	1 nm = 1 nanometer = 0.000000001 m

**Time Units:** 60 s = 1 min    60 min = 1 hr    24 hr = 1 day    365 days = 1 yr

**Energy Units:** 1 Calories = 4184 J (Joules)

**Mass Units:** 1 pound = 0.454 kg

**Length Units:** 1 inches = 2.54 cm    12 inches = 1 feet    1 miles = 1.61 km

Convert the following to the desired unit.

*(many were rounded randomly)*

- a) 3.2 km = 3200 m
- b) 38,942 m = 38.942 km
- c) 489 g = 0.489 kg
- d) 0.43 kg = 430 g
- e) 2800 ms = 2.8 s
- f) 28 cm = 0.28 m
- g) 5,890 mm = 589 cm
- h) 290 g = 0.29 kg
- i) 8,918 J = 8.918 kJ
- j) 2.3 cm = 0.023 m
- k) 89 cg = 8,900 g
- l) 23,000 μm = 0.023 m
- m) 889,290 g = 0.88929 Mg
- n) 389 ms = 0.389 s
- o) 2.8 μm = 2800 nm
- p) 732 nm = 0.732 μm
- q) 0.0014 km = 140 cm
- r) 180 mm = 180,000 μm
- s) 0.0002 kg = 200 mg
- t) 230 s = 3.83 min
- u) 490 Calories = 2,050,160 J
- v) 289 inches = 24.08 feet
- w) 68 miles = 109.48 km
- x) 3.2 kg = 7.05 pounds
- y) 5882 s = 98 min
- z) 823 mm = 32.4 inches
- aa) 37895 s = 10.5 hr
- bb) 2.3 kJ = 0.55 Calories
- cc) 289,058 ms = 4.82 min
- dd) 5,890 inches = 149.6 m
- ee) 223 g = 0.491 pounds
- ff) 0.02 mm = 20 μm
- gg) 70 inches = 177.8 cm
- hh) 1.5 year = 47,300,000 s
- ii) 35 miles/hour = 56.3 km/hour
- jj) 1200 km/hour = 20 km/min
- kk) 59 m/s = 212.4 km/hour
- ll) 44.72 km/h = 12.42 m/s