

SI Units

Quantity	Quantity Symbol	Unit Name	Unit Abbreviation
Mass	<i>m</i>	kilogram	kg
Length	<i>l</i>	meter	m
Time	<i>t</i>	second	s
Temperature	<i>T</i>	Kelvin	K
Amount of substance	<i>n</i>	mole	mol

Metric Prefixes

Prefix	Abbreviation	Meaning	Scientific Notation	Example
tera	T	1 000 000 000 000	10^{12}	1 terameter (Tm) = 1×10^{12} m
giga	G	1 000 000 000	10^9	1 gigameter (Gm) = 1×10^9 m
mega	M	1 000 000	10^6	1 megameter (Mm) = 1×10^6 m
*kilo	k	1000	10^3	1 kilometer (km) = 1×10^3 m = 1000 m
hecto	h	100	10^2	1 hectometer (hm) = 1×10^2 m = 100 m
deka	da	10	10^1	1 dekameter (dam) = 1×10^1 m = 10 m
		1	10^0	1 meter (m)
deci	d	1/10	10^{-1}	1 decimeter (dm) = 1×10^{-1} m = 0.1 m
*centi	c	1/100	10^{-2}	1 centimeter (cm) = 1×10^{-2} m = 0.01 m
*milli	m	1/1000	10^{-3}	1 millimeter (mm) = 1×10^{-3} m = 0.001 m
micro	μ	1/1 000 000	10^{-6}	1 micrometer (μ m) = 1×10^{-6} m
nano	n	1/1 000 000 000	10^{-9}	1 nanometer (nm) = 1×10^{-9} m
pico	p	1/1 000 000 000 000	10^{-12}	1 picometer (pm) = 1×10^{-12} m
femto	f	1/1 000 000 000 000 000	10^{-15}	1 femtometer (fm) = 1×10^{-15} m

Examples:

- 1) 198 g = _____ kg 2) 75mL = _____ L 3) 50 cm = _____ m
- 4) 6.3 cm = _____ mm 5) 4 Gbyte = _____ Mbyte 6) 430 mm = _____ nm

Practice: For each pair, convert one measurement to match the unit of the other. Then compare the magnitude of the quantities using <, >, or =

- 7) 63 cm 6 m 8) 5 g 508 mg 9) 1500 mL 1.5 L 10) 536 cm 53.6 dm
- 11) 43 mg 5 g 12) 3.6 m 36 cm 13) 0.5 L 500 mL 14) 82.0 μ L 0.000 00820 L