

5.1.8 Metric Conversions and Scientific Notation

Convert the following:

- 200 cm = _____ m
- 4 m = _____ cm
- 2000 cm = _____ km
- 2 km = _____ mm
- 17 cm = _____ m
- 8.29 cm = _____ km
- 0.019 cm = _____ m
- 1 μm = _____ m
- 1 cm^3 = _____ mL
- 100 mL = _____ L
- 17.26 mL = _____ L
- 18.92 g = _____ mg
- 0.69 mL = _____ cm^3
- 0.090 mm = _____ dm
- 12 cm^3 = _____ L
- 3000 mm = _____ m
- 5 m = _____ mm
- 25 km = _____ m
- 1 cm = _____ m
- 1.67 cm = _____ mm
- 13.72 m = _____ cm
- 0.62 mm = _____ μm
- 12.72 km = _____ m
- 14 L = _____ dm^3
- 1000 mg = _____ g
- 65 kg = _____ g
- 43.6 g = _____ kg
- 18 μm = _____ m
- 12.5 km = _____ m
- 13 L = _____ cm^3
- 42 km = _____ m
- 600 m = _____ mm
- 6 dm = _____ cm
- 13456 cm = _____ mm
- 12 hm = _____ m
- 80 dam = _____ cm

Scientific Notation

Extremely large or small numbers are awkward to record in full. Scientists find it easier to report such numbers in a standard form referred to as scientific notation. For scientific notation, one digit (other than 0) is placed before the decimal point. The other significant digits are placed after the decimal point. (Also read textbook p576).

Examples:

$$0.0235 \text{ mL} = 2.35 \times 10^{-2} \text{ mL}$$

$$3562.49 \text{ Km} = 3.56249 \times 10^3 \text{ Km}$$

Rewrite the following in scientific notation:

- 0.000 045 km _____
- 90 200 s _____
- 290 000 N _____
- 0.000 042 km _____
- 20 s _____
- 456 000 000 g _____
- 0.0076 cm _____
- 0.0004 57 W _____
- 456 L _____
- 0.0623 W _____

Rewrite the following in full (expand):

- $9.6 \times 10^4 \text{ m}$ _____
- $3.4 \times 10^{-3} \text{ m}$ _____
- $4.56 \times 10^{-1} \text{ cm}$ _____
- $5.6 \times 10^{-5} \text{ cm}$ _____
- $1.6 \times 10^2 \text{ m}$ _____
- $3 \times 10^0 \text{ m}$ _____