

Dimensional Analysis Worksheet

Key

Show all dimensional analysis work and express your answer in scientific notation with the correct significant figures.

1. How many cm in 0.001200 km? 4 s.f.

$$\left(\frac{0.001200 \text{ km}}{1} \right) \left(\frac{1000 \text{ m}}{1 \text{ km}} \right) \left(\frac{100 \text{ cm}}{1 \text{ m}} \right) = \boxed{1.200 \times 10^2 \text{ cm}}$$

2. How many Gm in $2.00 \times 10^9 \mu\text{m}$? 3 s.f.

$$\left(\frac{2.00 \times 10^9 \mu\text{m}}{1} \right) \left(\frac{1 \text{ m}}{1,000,000 \mu\text{m}} \right) \left(\frac{1 \text{ Gm}}{1,000,000,000 \text{ m}} \right) = \boxed{2.00 \times 10^{-6} \text{ Gm}}$$

3. How many meters in 5.09 feet?

$$\left(\frac{5.09 \text{ ft}}{1} \right) \left(\frac{12 \text{ inches}}{1 \text{ ft}} \right) \left(\frac{2.54 \text{ cm}}{1 \text{ inch}} \right) \left(\frac{1 \text{ m}}{100 \text{ cm}} \right) = \boxed{1.55 \times 10^0 \text{ m}}$$

4. A snail is moving at a velocity of 1.10 cm per minute. What is this velocity in meters per second?

$$\left(\frac{1.10 \text{ cm}}{1 \text{ minute}} \right) \left(\frac{1 \text{ m}}{100 \text{ cm}} \right) \left(\frac{1 \text{ minute}}{60 \text{ seconds}} \right) = \boxed{1.83 \times 10^{-4} \frac{\text{m}}{\text{s}}}$$