

1. State the number of significant digits in each measurement.

- a) 0.003068 m 4 b) 75.00 m 4 c) 5.029 m 4 d) 750 m 2

2. Solve the following problems and report answers with appropriate number of significant digits, using scientific notation.

1) $6.201 \text{ cm} + 7.4 \text{ cm} + 0.68 \text{ cm} + 12.0 \text{ cm} =$

$26.3 \text{ cm} = 2.63 \times 10^1 \text{ cm}$

4) $10.4168 \text{ m} - 6.0 \text{ m} =$

$4.4 \text{ m} = 4.4 \times 10^0 \text{ m}$

5) $12.00 \text{ m} + 15.001 \text{ kg} =$

N/A

6) $1.31 \text{ cm} \times 2.3 \text{ cm} =$

$3.0 \text{ cm}^2 = 3.0 \times 10^0 \text{ cm}^2$

8) $20.2 \text{ cm} / 7.41 \text{ s} =$

$2.72 \text{ cm/s} = 2.72 \times 10^0 \text{ cm/s}$

3) $(4.11 \times 10^{-6}) (7.51 \times 10^{-4}) =$

3.09×10^{-9}

4) $8.45 \times 10^7 / 6.74 \times 10^3 =$

1.26×10^4

3. Use Dimensional Analysis to solve the following - SHOW YOUR WORK! BE NEAT!

1. 87 yds = $87 \text{ yds} \times \frac{3 \text{ ft}}{1 \text{ yd}} \times \frac{12 \text{ in}}{1 \text{ ft}} \times \frac{2.54 \text{ cm}}{1 \text{ in}} = \underline{7955.3} \text{ cm}$

2. 1 kg = $1 \text{ kg} \times \frac{2.2 \text{ lb}}{1 \text{ kg}} \times \frac{16 \text{ oz}}{1 \text{ lb}} = \underline{35.2} \text{ ounces}$

3. 66 gal = $66 \text{ gal} \times \frac{3.78 \text{ L}}{1 \text{ gal}} = \underline{249.5} \text{ Liter}$

4. 87 mm = $87 \text{ mm} \times \frac{1 \text{ cm}}{10 \text{ mm}} = \underline{8.7} \text{ cm}$

5. 56 m = $56 \text{ m} \times \frac{3.28 \text{ ft}}{1 \text{ m}} = \underline{183.7} \text{ ft}$

6. 78 Kg = $78 \text{ kg} \times \frac{2.2 \text{ lbs}}{1 \text{ kg}} \times \frac{1 \text{ slug}}{32 \text{ lbs}} = \underline{5.36} \text{ slugs}$