

# Significant Figures

1. How many significant figures are there in each of the following measurements?

- |              |                   |                         |
|--------------|-------------------|-------------------------|
| a) 23 cm     | h) 0.238 km       | o) 350 000 cm           |
| b) 1.498 g   | i) 8.0335 cm      | p) 180.00 s             |
| c) 248.3 s   | j) 0.055 87 m     | q) $3.50 \cdot 10^3$ cm |
| d) 9.855 mL  | k) 307 g          | r) $1.604 \cdot 10^4$ m |
| e) 76.414 kG | l) 1.400 82 cm    | s) 14.380 s             |
| f) 32.8 m    | m) 0.000 589 00 g | t) 0.0804 s             |
| g) 107 mm    | n) 4500 km        | u) 3.450 00 m           |

2. Express the answer to each of the following calculations with the correct numbers of significant figures.

- |  |  |  |
|--|--|--|
| a) $1.2 \text{ cm} \times 1.3 \text{ cm}$    | h) $400 \text{ m} \times 87\,488 \text{ m}$                      | o) $3.085 \text{ cm}^2 \div 2.774\,48 \text{ cm}$              |
| b) $2.1 \text{ m} \times 1.8 \text{ m}$      | i) $2.3 \cdot 10^6 \text{ m} \times 1.45 \cdot 10^2 \text{ m}$   | p) $0.0045 \text{ mm}^2 \div 0.90 \text{ mm}$                  |
| c) $1.45 \text{ m} \times 2.2 \text{ m}$     | j) $8.71 \cdot 10^2 \text{ mm} \times 1.0 \cdot 10^2 \text{ mm}$ | q) $120 \text{ km}^2 \div 8.56 \text{ km}$                     |
| d) $2.5 \text{ mm} \times 1.33 \text{ mm}$   | k) $32.88 \text{ m}^2 \div 4.388 \text{ m}$                      | r) $0.7600 \text{ mm}^3 \div 1.50 \text{ mm}$                  |
| e) $4.3324 \text{ km} \times 1.2 \text{ km}$ | l) $16.5 \text{ km}^2 \div 1.8 \text{ km}$                       | s) $4.80 \cdot 10^5 \text{ m}^2 \div 8.5 \cdot 10^3 \text{ m}$ |
| f) $3.0 \text{ cm} \times 4.000 \text{ cm}$  | m) $84.99 \text{ m}^2 \div 2.63 \text{ m}$                       | t) $6.30 \cdot 10^0 \text{ m}^3 \div 0.0804 \text{ m}$         |
| g) $2.005 \text{ cm} \times 5.0 \text{ cm}$  | n) $9.9 \text{ mm}^2 \div 3.4484 \text{ mm}$                     | u) $3.4500 \text{ cm}^2 \div 450 \text{ cm}$                   |

3. Express the answer to each of the following calculations with the correct number of significant figures.

- |   |   |   |
|---|---|---|
| a) $3.42 \text{ cm} + 8.13 \text{ cm}$  | h) $13.89 \text{ cm} + 6.8932 \text{ cm}$                   | o) $133 \text{ L} - 6.45 \text{ L}$                         |
| b) $4.939 \text{ g} + 3.822 \text{ g}$  | i) $1.30 \cdot 10^2 \text{ cm} + 2.4 \cdot 10^4 \text{ cm}$ | p) $750 \text{ cm} - 677.4 \text{ cm}$                      |
| c) $17.8 \text{ cm} + 12.11 \text{ cm}$ | j) $8.19 \cdot 10^3 \text{ m} + 1.400 \cdot 10^4 \text{ m}$ | q) $10\,000 \text{ m} - 94 \text{ m}$                       |
| d) $4.552 \text{ kg} + 3.14 \text{ kg}$ | k) $3.882 \text{ g} - 2.114 \text{ g}$                      | r) $0.0890 \text{ cm} - 0.0666 \text{ cm}$                  |
| e) $1.966 \text{ s} + 3.4422 \text{ s}$ | l) $4.894 \text{ cm} - 2.33 \text{ cm}$                     | s) $0.340 \cdot 10^1 \text{ g} - 1.20 \cdot 10^2 \text{ g}$ |
| f) $80 \text{ cm} + 13.0 \text{ cm}$    | m) $15.6674 \text{ m} - 12.838 \text{ m}$                   | t) $4.5 \cdot 10^5 \text{ km} - 3.10 \cdot 10^3 \text{ km}$ |
| g) $72.60 \text{ m} + 0.0950 \text{ m}$ | n) $11.22 \text{ g} - 8.8 \text{ g}$                        |   |