Significant Digits are digits that are the result of careful measurement.

Rules
1. All non-zero digits are significant i.e. 4.2359 (5)
2. Zeros contained between non-zero digits are significant.
   i.e. 2.09 (3)
3. Zeros after a decimal following a non-zero are significant.
   i.e. 2.3000 (5)
4. Zeros used to locate a decimal are not significant
   i.e. 3000 (1), 0.0009 (1)

HINT Use scientific notation to avoid confusion.
i.e. $0.009073 = 9.073 \times 10^{-3}$ (4)

5. Values that are a count, constant or conversion are infinitely significant
   i.e. $c = 3 \times 10^{8}$ m/s (∞)

Conversions with SI Prefixes

Steps

1. Put the value in scientific notation.
2. Determine the conversion ($\uparrow$x, $\downarrow$÷)
3. Adjust the exponent (x +, ÷ -)

Example:

$$36700 \text{ ng} \rightarrow \text{zg}$$

$$3.67 \times 10^4 \times 10^{12}$$

$$= 3.67 \times 10^{16} \text{ zg}$$

Example

$$0.0045 \text{ cB} \rightarrow \text{MB}$$

$$\frac{4.5 \times 10^{-3}}{10^8}$$

$$= 4.5 \times 10^{-11} \text{ MB}$$