## Worksheet 4.5: Solutions

## Precision, accuracy and significant figures

No.	Answer
1	<b>B</b> and <b>D</b> . Measured quantities have an inherent uncertainty.
2	<ul> <li>a N</li> <li>b P</li> <li>c B</li> </ul>
3	Averaging a set of results reduces the effects of random errors associated with taking measurements.
4	<ul> <li>a 3</li> <li>b 4</li> <li>c 3</li> <li>d 4</li> </ul>
5	$ \begin{array}{lll} \textbf{a} & 1.407 \times 10^2 \\ \textbf{b} & 5.005 \times 10^3 \\ \textbf{c} & 9.800 \times 10^2 \\ \textbf{d} & 7.5 \times 10^{-3} \end{array} $
6	$\begin{array}{lll} \textbf{a} & 7.80 \\ \textbf{b} & 6.00 \times 10^2 \\ \textbf{c} & 9.83 \times 10^1 \\ \textbf{d} & 6.00 \times 10^{-4} \end{array}$
7	$egin{array}{cccc} {f a} & 6  imes 10^3 \ {f b} & 6.000  imes 10^3 \ \end{array}$
8	$egin{array}{lll} {f a} & 6.7 \times 10^2 \\ {f b} & 0.30,  {\rm or}  3.0 \times 10^{-1} \\ {f c} & 2.0 \\ {f d} & 4.4 \times 10^2 \\ \end{array}$
9	<ul><li>a 44.6</li><li>b 358.2</li></ul>
10	$\frac{722}{12}$ = 60.2 g  The answer should be given to 3 significant figures. The 12 is an exact number and is therefore not relevant to the significant figure count.