General Chemistry
Mr. MacGillivray
Sample Quiz #3:
Dimensional Analysis I

Only one of the conversion factors in each pair is correct. Circle the correct conversion factor.

$\frac{1000\ \text{ml}}{1\ \text{L}}$ or $\frac{1\ \text{mL}}{1000\ \text{L}}$

$\frac{1\ \text{kg}}{1000\ \text{g}}$ or $\frac{1000\ \text{kg}}{1\ \text{g}}$

$\frac{100\ \text{cm}^3}{1\ \text{L}}$ or $\frac{1000\ \text{cm}^3}{1\ \text{L}}$

remember: $1\text{cm}^3 = 1\text{ml}$

- Perform each of the following conversions using dimensional analysis.
- You must show work.
- The method used must be dimensional analysis as shown in class and in the text.
- Round answers to the correct number of significant figures.

Convert 138 m to cm

$$138\text{m} \times \frac{100\text{cm}}{1\text{m}} = 13800\text{cm} = 1.38 \times 10^4\ \text{cm}$$

Convert 138 m to km

$$138\text{m} \times \frac{1\text{km}}{1000\text{m}} = 0.138\ \text{km} \quad \text{or,}\ 1.38 \times 10^{-1}\ \text{km}$$

3.89×10^4 L to mL

$$3.89 \times 10^4\text{L} \times \frac{1000\text{ml}}{1\text{L}} = 3.89 \times 10^7\ \text{ml}$$