

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

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

Convert 138 m to km

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

$3.89 \times 10^4 \text{ L}$ to mL

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