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.

$\dfrac{1000 \text{ mL}}{1 \text{ L}}$ or $\dfrac{1 \text{ mL}}{1000 \text{ L}}$

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

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

- 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

Convert   138 m   to   km

3.89×10^4 L   to   mL

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

$$\dfrac{\text{1000 mL}}{\text{1 L}}$$ ⬭ or $$\dfrac{\text{1 mL}}{\text{1000 L}}$$

$$\dfrac{\text{1 kg}}{\text{1000 g}}$$ ⬭ or $$\dfrac{\text{1000 kg}}{\text{1 g}}$$

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

- 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

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

Convert   138 m   to   km

$$138 \text{ m x } \dfrac{1 \text{ km}}{1000 \text{ m}} = 0.138 \text{ km or } 1.38 \times 10^{-1} \text{ km}$$

3.89 x 10⁴ L   to   mL

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