

General Chemistry
Mr. MacGillivray
Dimensional Analysis Practice Problems

Make the following conversions:

- 1) 4.32×10^{-2} mL to L

$$4.32 \times 10^{-2} \text{ mL} \times \frac{1 \text{ L}}{1000 \text{ mL}} = \underline{4.32 \times 10^{-5} \text{ L}}$$

- 2) 0.0655 kg to g

$$0.0655 \text{ kg} \times \frac{10^3 \text{ g}}{1 \text{ kg}} = \underline{65.5 \text{ g}} \quad (\text{or } 6.55 \times 10^1 \text{ g})$$

- 3) 4.62×10^3 cm to km

$$4.62 \times 10^3 \text{ cm} \times \frac{1 \text{ m}}{10^2 \text{ cm}} \times \frac{1 \text{ km}}{10^3 \text{ m}} = \underline{4.62 \times 10^{-2} \text{ km}} \quad (\text{or } 0.0462 \text{ km})$$

- 4) 7.00 g/ml to kg/ml

$$\frac{7.00 \text{ g}}{\text{ml}} \times \frac{1 \text{ kg}}{10^3 \text{ g}} = \underline{7.00 \times 10^{-3} \frac{\text{kg}}{\text{ml}}}$$

- 5) 4.09×10^1 g/ml to g/L

$$4.09 \times 10^1 \frac{\text{g}}{\text{ml}} \times \frac{10^3 \text{ ml}}{1 \text{ L}} = \underline{4.09 \times 10^4 \frac{\text{g}}{\text{L}}}$$

- 6) 3.44 mg/s to kg/hr

$$3.44 \frac{\text{mg}}{\text{s}} \times \frac{1 \text{ g}}{10^3 \text{ mg}} \times \frac{1 \text{ kg}}{10^3 \text{ g}} \times \frac{60 \text{ s}}{1 \text{ min}} \times \frac{60 \text{ min}}{1 \text{ hr}} = \frac{\text{kg}}{\text{hr}} \quad \text{or } 0.0124$$

$$\underline{1.24 \times 10^{-2} \frac{\text{kg}}{\text{hr}}}$$

