Unit Conversions Revisited

Name - _____KEY_____

1.) If one mole of a gas has a volume of 22.4 L, how many moles are there in 25.0 L of gas?

Answer – $25.0\ mL\ \times \frac{1\ mol}{22.4\ L} = 1.11607\ mol$ $\equiv 1.12\ mol$

2.) How many seconds must an electrical current of 35 coulombs/s flow in order to deliver 200.0 coulombs of charge?

Answer – $200.0\ C\ \times \frac{1\ s}{35\ C} = 5.714286\ s$ $\equiv 5.7\ s$

3.) The density of mercury metal is 13.622 g/mL. What is the mass of 3.55 mL of the metal?

Answer – $3.55\ mL\ \times \frac{13.622\ g}{1\ mL} = 48.3581\ g$ $\equiv 48.4\ g$

4.) The density of table salt is 2.16 g/mL. What is the mass of 100 mL of this solid?

Answer – $100\ mL\ \times \frac{2.16\ g}{1\ mL} = 216\ g$ $\equiv 200\ g$

5.) A particle moves through a gas at a speed of 0.015 km/s. How far will it move in 5.5 s?

Answer – $5.5\ s\ \times \frac{0.015\ km}{1\ s} = 0.0825\ km$ $\equiv 0.083\ km$

6.) A solution contains 61.33 g of barium nitrate per 1 L. How many grams of barium nitrate are contained in 2.70 L of this solution?

Answer – $2.70\ L\ \times \frac{61.33\ g}{1\ L} = 165.591\ g$ $\equiv 1.66 \times 10^2\ g$