

Practice Problems:

1. How many moles of H_2SO_4 are contained in 3.50 L of a 6.50 M solution?

Answers: *When you are GIVEN the volume and the molarity (moles per liter), ALWAYS start with the volume so that you can cancel out the volume and be left with moles (this is what you want !!!)*

$$\frac{3.50 \text{ L}}{1} \times \frac{6.50 \text{ mol } H_2SO_4}{L} = 22.75 \text{ mol } H_2SO_4$$

2. What is the molarity of a solution that has 75.0 grams of calcium hydroxide dissolved in enough water so that the total volume is 3.50 liters?

Answers: *There are many ways to calculate (answer) this question... When first learning how to do this type of problem it may be easiest to "build it" in a couple of steps.*

First, Convert the grams to moles:

$$\frac{75.0 \text{ g } Ca(OH)_2}{1} \times \frac{1 \text{ mol } Ca(OH)_2}{74.096 \text{ g } Ca(OH)_2} = 1.0122 \text{ mol } Ca(OH)_2$$

Next, Place the number of moles that you just calculated over the total volume:

$$M = \frac{1.0122 \text{ mol } Ca(OH)_2}{3.50 \text{ L}} = 0.289 \frac{\text{mol}}{\text{L}}$$