Name: _____   Section: _____

STEPS FOR SOLVING SCIENTIFIC WORD PROBLEMS WITH FORMULAS

1. **Read the question/problem thoroughly and determine what it is asking for (your unknown).**

> *What is the mass of a 350 cm³ sample of pure silicon with a density of 2.336 g/cm³?*
> *Unknown = mass of silicon*

2. **Write down all information that is provided in the question/problem.**

> *Mass of silicon = ?*
> *Density of silicon = 2.336 g/cm³*
> *Volume of silicon = 350 cm³*

3. **Identify/select the formula that will help you solve for your unknown and write it down.**

> *Density = $\frac{Mass}{Volume}$*

4. **Determine if you will use the formula "as is" or if you need to rearrange it to solve for a different variable. If you can use it "as is," move on to Step 5, if not, rearrange it for the unknown variable as you would a mathematical equation.**

> *Since the density formula cannot be used "as is" it needs to be rearranged*
> *so that mass is the unknown variable → Mass = (Density)(Volume)*

5. **Using the information from Step 2, "plug" these values into the formula.**

> *Mass = (2.336 g/cm³)(350 cm³)*

6. **Perform the specified mathematical functions to get your final answer. In this case, we multiplied 2.336 g/cm³ by 350 cm³ to get the answer below.**

> *Mass = 817.6 $\frac{(g)(cm³)}{(cm³)}$*

7. **Cancel any necessary units. This should provide you with a sensible unit when considering what your question/problem is asking for.**

> *Mass = 817.6 $\frac{(g)(cm³)}{(cm³)}$ → Mass of silicon= 817.6 grams*

8. **Check your answer by inserting it back into the formula. Also, be sure that your answer makes sense!**