**Unit 1: Tools of Chemistry**

If you can do all the things listed below, you are ready for the Unit 1 test!

Place a checkmark next to each item that you can do! If a sample problem is given, complete it as evidence.

|  |  |
| --- | --- |
| **\_\_\_\_\_1. I can list five important lab safety rules.** | 5 important lab safety rules are:  1.  2.  3.  4.  5. |
| **\_\_\_\_\_2. I can identify the most common laboratory tools such as: beaker, graduated cylinder, Erlenmeyer flask, scoopula, beaker tongs, test tube, test tube rack, test tube holder, crucible tongs, Bunsen burner, stirring rod, funnel, dropper pipette (aka eye dropper).** | Name each piece of equipment below. |
| **\_\_\_\_\_3. I can determine the independent and dependent variable in a lab experiment.** | A student wants to find out the effect of concentration on reaction time.  What is the independent variable?  What is the dependent variable? |
| **\_\_\_\_\_4. I can determine the number of significant figures in a measurement.** | How many significant figures are there in 30.50 cm?  How many significant figures are there in 400 sec? |
| **\_\_\_\_\_5. I can determine the answer to a math problem to the correct number of significant figures.** | To the correct number of significant figures, what is the answer to  5.93 mL + 4.6 mL =  To the correct number of significant figures, what is the answer to  5.93 mL 4.6 mL = |
| **\_\_\_\_\_6. I can read the meniscus on a graduated cylinder to the correct number of significant figures.** | The volume is\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ mL. |
| **\_\_\_\_\_7. I can convert numbers into scientific notation from standard notation.** | Convert 87,394,000,000,000 to scientific notation.  Convert 0.0000040934 to scientific notation. |
| **\_\_\_\_\_8. I can convert numbers into standard notation from scientific notation.** | Convert 5.8 x 109 to standard notation.  Convert 4.3 x 10-5 to standard notation. |
| **\_\_\_\_\_9. I can convert between different metric units.** | 9.3 km = \_\_\_\_\_\_\_\_\_\_ m  39,983 mL = \_\_\_\_\_\_\_\_\_\_ kL |
| **\_\_\_\_\_10. I can solve for “x” when it’s in the denominator of a fraction.** | What is the volume, in cm3, of 54.6 g of beryllium (density = 1.85 g/cm3) |
| **\_\_\_\_\_11. I can convert oC to Kelvin and Kelvin to oC.** | What kelvin temperature is equal to 200oC?  What Celsius temperature is equal to 200K? |
| **\_\_\_\_\_12. I can differentiate between quantitative observations, qualitative observations, and inferences.** | Label each observation below as qualitative observation, quantitative observation, or inference.  The precipitate is calcium carbonate.  The solution is colorless and has a sweet smell.  I have 15 mL of the solution. |
| **\_\_\_\_\_13. I can calculate the percent error for my lab data.** | A student determined the density of a sample of copper to be 9.20 g/cm3. What was their percent error? *Use Table S for the accepted density!* |