**Chemistry** Mr. Kron Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ **Absolute and Relative Error WS**

1. The yield predicted from theory in a particular chemical reaction is 0.1002 g. The actual yield obtained by a chemist performing the experiment is 0.0098 g. Calculate the relative error for this experiment.
2. A student decides it’s possible to estimate the capacity of a test tube by treating it as a rectangle and neglecting its “roundness”. On this basis, the student finds the capacity to be 100.5 mL. The actual capacity of the test tube is 100.0 mL. What percent error has resulted from the student’s approximation?
3. A chemist attempts to determine the accuracy of a tensiometer, an instrument used to measure surface tension. To do this, the chemist tests the surface tension of pure water and obtains a value of 71.28 dynes/cm. The standard value for this quantity is 71.97 dynes/cm. What is the relative error of the tensiometer?

**4.** While on a bus ride to school, a Rocori general chemistry students decides to estimate the velocity of the bus by observing the parallax (shift) of the sun with respect to changing position of the bus. The student estimates the bus to be traveling at 93.55758 km/hr, if the actual speed of the bus is 85 km/hr what is the percent error?

**5.** For each set of measurement (each balance), Decide if the group is **accurate**, **precise,** **neither** or **both**. Calculate the relative error for each balance. If the object has an actual mass of **5.11 g (accepted value).**

**Balance 1**

5.10 g

5.13 g

5.12 g

5.12 g

5.11 g

**Avg: \_\_\_\_\_\_\_**

**Balance 2**

8.22 g

5.20 g

3.00 g

4.97 g

5.08 g

**\_\_\_\_\_\_\_**

**Balance 3**

6.72 g

6.72 g

6.71 g

6.73 g

6.73 g

**\_\_\_\_\_\_\_**

**Balance 4**

6.35 g

5.10 g

5.40 g

5.15 g

6.21 g

**\_\_\_\_\_\_\_**

**Balance #1 = \_\_\_\_\_\_\_\_**

**% Error (Er) =**

**Balance #2 = \_\_\_\_\_\_\_\_**

**% Error (Er) =**

**Balance #3 = \_\_\_\_\_\_\_\_**

**% Error (Er) =**

**Balance #4 = \_\_\_\_\_\_\_\_**

**% Error (Er) =**