Name:_____

Math and Lab Calculations Remediation
Video Assignment

Significant Digits

How many significant digits are in the following measurements?

1) 0.0067 cm _____ 2) 4.300 dm^3 _____ 3) 11.06 liters _____

4) 1.0102 grams _____ 5) 0.0087 feet _____ 6) 10000 sec _____

7) 6.02 x 10^{23} atoms _____ 8) -1.0 x 10^{-3} sec _____ 9) 0.01010 meters _____

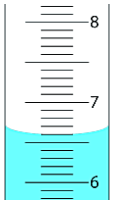
How many significant digits should be represented in the answers to these calculations?

$$\%error = \frac{|meas - acc|}{acc} x100 \qquad \%error = \frac{|meas - acc|}{acc} x100 \qquad Density = \frac{mass}{volume}$$

$$\%error = \frac{|1.25g - 1.01g|}{1.01g} \qquad \%error = \frac{|1.07g/ml - 1.11g/ml|}{1.11g/ml} \qquad Density = \frac{8.08g}{1.125mL}$$

Estimating Measurements

For each example, write what measurement would you record and explain your reasoning about the number of decimal places you chose to record.



_____ml

_____g

_____ _____

_____ _____

_____ _____

_____ _____

Density Lab

A student carries out a procedure similar to the one you did in lab. Using water displacement, she collects the following data while trying to determine the mass and volume of an irregular shaped piece of metal. As you did in your lab write-up, completely represent all the calculations necessary to determine the density of the metal. Then, calculate the percent error of your calculated density assuming the actual density of the metal is 8.10 g/ml.

Mass of Metal: 18.28g
Volume of Water: 15.0 mL
Volume of Water with Metal: 17.3 mL

Volume of metal

Density of metal

Percent Error