Chemistry 100 Name_____

Date _____

EXPERIMENT 15 - ACCURACY AND PRECISION

Data and Results

	Trial 1	Trial 2	Trial 3
mass flask and 10.0 mL water			
mass of flask empty			
mass of 10.0 mL water			
Density of water = $\frac{\text{mass of water}}{\text{10.0 mL}}$			

Calculate your average (or mean) value for the density of the water

$$= \frac{\text{sum of the three density results}}{3} = \_\_\_\_\_$$

How precise were you?

Subtract to find the difference (deviation) of each of your density results and your average density result. Use the absolute differences here.... ignoring positive and negative signs.

	Trial 1	Trial 2	Trial 3
Deviation from Average			

Calculate your average deviation = $\frac{\text{sum of your deviations}}{3}$ = _____

How accurate were you?

The density values for pure water at some different temperatures are listed in reference books as:

Temperature, °C	Density, g/mL
20	0.9982
21	0.9980
22	0.9978
23	0.9975
24	0.9973
25	0.9970
26	0.9968
27	0.9965
28	0.9962

What is the accepted value for the density of water at the temperature of your water sample ?

_____

Calculate your error = your average density - the accepted value

= _____

Calculate your percentage error = $\frac{\text{error}}{\text{accepted value}}$ x 100

% Error =_____