CHEM 1100 Graphing, Accuracy and Precision Worksheet  Dr. Stone

1. Make a graph of Mass vs Volume using the following data on the paper provided:

| Mass of metal(g) | Volume of metal (mL) |
|---|---|
| 10.125 | 3.7 |
| 27.684 | 10.3 |
| 38.145 | 13.8 |
| 47.751 | 17.2 |

2. Use the data above to determine the density of the metal. Put your answer in the box, use correct significant figures, scientific notation and units.

3. What is the difference between precision and accuracy?
**Precision** is getting _____results _____

Use the _____ or the _____ to measure precision

**Accuracy** is obtaining results that _____ as published values

Use the _____to measure accuracy

4. Calculate the average density and the average deviation for this data:
8.72 g/mL
7.56 g/mL
6.54 g/mL
6.21 g/mL

5. The literature value for the density of Zinc is 7.140g/mL
Use the data given in the above question to determine the % error.

6. Which of the following data are accurate? Which are precise? Circle the most accurate results, put a box around the most precise results.

| Density of a metal | % error |
|---|---|
| 7.22 ± 0.56 g/mL | 1.12 |
| 7.56 ± 0.88 g/mL | 5.88 |
| 6.58 ± 0.21 g/mL | 7.84 |