**Unit 1 Review Sheet**

 **I. Data and Significant Figures**

 1. What is the difference between accuracy and precision?

 2. What are the two types of data?

 Classify each of the following as either quantitative or qualitative:

 smells like gasoline \_\_\_\_\_\_\_\_\_\_\_\_ 398 inches \_\_\_\_\_\_\_\_\_\_\_\_\_

 17 feet \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ hot \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 furry \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 59 years \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 11 mph \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ tastes salty\_\_\_\_\_\_\_\_\_\_\_\_\_

 3. For additional practice on identifying significant figures and performing

 calculations with significant figures see accompanying handout

 4. Base units

 -- What is the difference between a base unit and a derived unit?

 Fill in the table below with the appropriate SI unit of measurement:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Property** | ***Mass*** | ***Length*** | ***Amount of a Substance*** | ***Time*** | ***Temperature*** |
| **SI Base Unit** |  |  |  |  |  |

 5. What is the difference between an observation and an inference?

 -- During the CuCl2/Al lab, what were some observations that you made?

 -- What were some inferences that you made?

 **II. Classification of Matter**

 1. Fill in the different ways that matter can be classified by using the

 blank flowchart

 2. What is the difference between an element and a compound?

 3. What is the difference between a pure substance and a mixture?

 4. What is the difference between a heterogeneous mixture and a

 homogeneous mixture?

Classify each of the materials below. In the center column, state whether the material is a **pure substance** or a **mixture**. If the material is a pure substance, further classify it as either an **element** or **compound** in the right column. Similarly, if the material is a mixture, further classify it as **homogeneous** or **heterogeneous** in the right column.

|  |  |  |
| --- | --- | --- |
| Material | Pure Substance***or Mixture*** | ***Element, Compound,******Homogeneous, Heterogeneous*** |
| sugar (C6H12O6) |  |  |
| air |  |  |
| steel(Fe + C) |  |  |
| salt and pepper mixed together |  |  |
| aluminum (Al) |  |  |
| hydrochloric acid (HCl) |  |  |
| uranium (U) |  |  |
| hamburger with mustard & ketchup |  |  |

**III. Physical and Chemical Properties**

 1. What is a physical change?

 2. What is a chemical change?

 3. What is the difference between an intensive property and extensive

 property? Be able to identify.

 Classify each of the following as either a physical change or a chemical

 change:

 Water is converted to steam \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 Magnesium reacts with oxygen to give a bright light and a gray powder

 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 A mirror drops onto the floor and shatters \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 HCl reacts with NaOH to produce salt and water \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 TNT decomposes into carbon dioxide, nitrogen, and water \_\_\_\_\_\_\_\_\_\_\_\_

 A wooden board is sawed in half \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**IV. Elements and Compounds**

 1. What is the difference between an element and a compound?

 Classify each of the following as an element or a compound:

 Gold (Au) \_\_\_\_\_\_\_\_\_\_\_\_ Sodium chloride (NaCl) \_\_\_\_\_\_\_\_

 Silver (Ag) \_\_\_\_\_\_\_\_\_\_\_\_ Carbon dioxide (CO2) \_\_\_\_\_\_\_\_\_\_

 Sugar (C6H12O6) \_\_\_\_\_\_\_\_\_\_ Phosphorous (P) \_\_\_\_\_\_\_\_\_\_\_\_\_\_

 **V. Density calculations and temperature conversions**

 Be able to perform calculations based on the above.

 Example problems:

 -- #47-50 (pg. 167)

 -- #60, 62 (pg. 167)