**Unit 1 Review Sheet** Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**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 Phy and Chem Changes 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 a 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 from review sheets. KNOW the formulas! Know Archimedes Principle.

VI. **Metric Conversions**: Must know Mega 🡪Nano

VII. **Elements and symbols**: #1- 36 for this test

VII. **Dimensional Analysis**- You will be given conversion factors needed EXCEPT: metrics (meaning base 10), density, temperature, time.

\*\*do not have to know metric conversions to ‘our system’

VIII. **Know** steps of scientific method,basic safety rules and lab equipment