**WP Unit 1 Measurement Study Guide – SECTION 1**  **Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

1. Label the following statements as a (A) Physical Change or (B) Chemical Change

\_\_\_\_\_\_\_ Boiling Water

\_\_\_\_\_\_\_ Decomposing water to H2 and O2 gas by passing an electric current through it.

\_\_\_\_\_\_\_ Exploding of potassium metal when place in water

\_\_\_\_\_\_\_ Breaking of glass

\_\_\_\_\_\_\_ Making lemonade (mixing lemons + water + sugar)

\_\_\_\_\_\_\_ Frying eggs

\_\_\_\_\_\_\_ Burning a Candle

\_\_\_\_\_\_\_ Whipping cream

\_\_\_\_\_\_\_ Leaves Changing Color

1. Name and describe the three states of matter
2. Butane (C4H8) is an easily compressible, flammable gas used in cigarette lighters. It has a melting point of -138.4oC and a boiling point of -0.5oC. Would you expect a butane lighter to work in winter when the termperature outdoors is -10oC? Why or why not?
3. Hydrogen peroxide, often used to disinfect cuts and scrapes, breaks down to yield water and oxygen

Hydrogen Peroxide 🡪 water + oxygen

1. Identify the reactants and products
2. Which of the substances are chemical compounds, and which are elements?
3. Describe the general properties of metals, metalloids, and nonmetals:
4. Supply the missing names or symbols below:

\_\_\_\_\_\_\_\_ Sodium N \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Hg \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_Chlorine \_\_\_\_\_\_\_\_ Phosphorous K \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

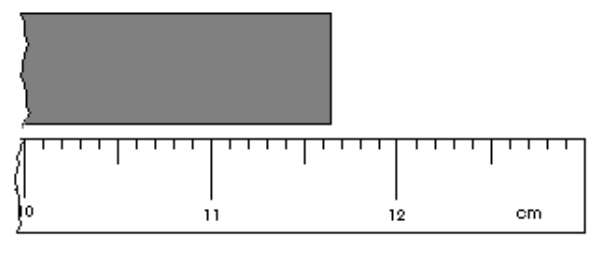
Mo \_\_\_\_\_\_\_\_\_\_\_\_\_\_ Cu \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Ag \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Correct the following statements:
2. The symbol for Bromine is BR
3. The symbol for Manganese is Mg
4. The symbol for Carbon is Ca
5. They symbol for Potassium is Po
6. What are the units used in the SI system and the Metric System to measure:

|  |  |  |
| --- | --- | --- |
| Measurement | SI System | Metric System |
| Mass |  |  |
| Length |  |  |
| Volume |  |  |
| Temperature |  |  |

**SECTION 2:**

1. Write the symbol for the following units:
2. Nanogram \_\_\_\_\_\_\_\_\_\_\_\_
3. Microliter \_\_\_\_\_\_\_\_\_\_\_\_
4. Milligram \_\_\_\_\_\_\_\_\_\_\_\_
5. Micrometer \_\_\_\_\_\_\_\_\_\_\_\_
6. Express the following numbers in scientific notation with the correct number of significant figures:
7. 9,457 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
8. 0.00007 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
9. 20,000,000,000 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
10. 0.012345 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
11. 652.38 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
12. Carry out the following calculations, express the answers to the correct numbers of significant, and include units in your answers.
    1. 5280 ft/mi X 6.2 mi \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
    2. 4.5 m X 3.25 m \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
    3. 2.50 g ÷ 8.3 g/cm3 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
    4. 4.70 cm + 6.8 cm – 2.543 cm \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
13. Carry out the following conversions. Consult your notebook for conversion standards
    1. 3.614 mg to grams a. \_\_\_\_\_\_\_\_\_\_\_\_\_
    2. 56.4 mi to kilometers b. \_\_\_\_\_\_\_\_\_\_\_\_\_
    3. 14.4 m to millimeters c. \_\_\_\_\_\_\_\_\_\_\_\_\_
    4. 6.03 X 10-6 cg to nanograms d.\_\_\_\_\_\_\_\_\_\_\_\_\_
    5. 2.0 L to quarts e.\_\_\_\_\_\_\_\_\_\_\_\_\_
14. The muzzle velocity of a bullet fired from a 9mm handgun is 1200 ft/s.
    1. How many miles per hour is this?
    2. If the bullet travels 24 ft before it strikes the target, how long will it take the bullet to get there?
15. A normal value for blood cholesterol is 200 mg/dL of blood. If a normal adult has a total blood volume of 5L, how much total cholesterol is present?
16. To the correct number of significant figures, record the measurement below:



1. How many significant figures are in each of the following:
   1. 14,397 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   2. 25.6 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   3. 1064 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   4. 10430 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   5. 0.00001 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   6. 0.110 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_