**Chapter 3, Section 1 Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

1. **Law of Conservation of Mass:**

Use the masses given on the left in grams to predict the masses on the right.

**S + O2 → SO2**

Reactants:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Product:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

32 g S, 32 g O2 \_\_\_\_\_\_\_\_ g SO2

**2 HgO → 2 Hg + O2**

Reactant:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Products:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_ g HgO 402 g Hg, 32 g O2

**H2CO3 → H2O + CO2**

Reactant:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Products:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

62 g H2CO3 18 g H2O, \_\_\_\_\_\_\_\_ g CO2

1. **Law of Definite Proportions:**

Give the chemical formula of water found in the following locations and amounts.

1. 1 teaspoon of water from your kitchen sink \_\_\_\_\_\_\_\_\_\_
2. 1 gallon of Sam’s Choice bottled water \_\_\_\_\_\_\_\_\_\_
3. 1 L of water taken from a swimming pool \_\_\_\_\_\_\_\_\_\_
4. a drop of rainwater \_\_\_\_\_\_\_\_\_\_
5. an ocean of seawater \_\_\_\_\_\_\_\_\_\_
6. water vapor coming from a tea kettle \_\_\_\_\_\_\_\_\_\_
7. the ice in the cafeteria freezer \_\_\_\_\_\_\_\_\_\_
8. the droplet of water inside popcorn kernels \_\_\_\_\_\_\_\_\_\_
9. **Law of Multiple Proportions:**

Two different compounds are formed by the elements carbon and oxygen. The first compound contains 42.9 g carbon and 57.1 g oxygen. The second compound contains 27.3 g carbon and 72.7 g oxygen. Show that the data are consistent with the law of multiple proportions.