Name: $\qquad$

# Identifying Reactants and Products/Law of Conservation of Mass 

Identify the reactants and products in the following examples.

1. $2 \mathrm{Na}+\mathrm{Cl}_{2} \rightarrow 2 \mathrm{NaCl}$

Reactants: $\qquad$ Products: $\qquad$
2. $6 \mathrm{CO}_{2}+6 \mathrm{H}_{2} \mathrm{O}+$ Light Energy $\rightarrow \mathrm{C}_{6} \mathrm{H}_{12} \mathrm{O}_{6}+6 \mathrm{O}_{2}$

Reactants: $\qquad$ Products: $\qquad$
3. When crystalline $\mathrm{C}_{6} \mathrm{H}_{12} \mathrm{O}_{6}$ is burned in oxygen, carbon dioxide and water vapor are formed.

Reactants: $\qquad$ Products: $\qquad$
4. When lithium hydroxide pellets are added to a solution of sulfuric acid, lithium sulfate and water are formed.

Reactants: $\qquad$ Products: $\qquad$
5. When baking soda and vinegar are added together, water, carbon dioxide and salt are formed.

Reactants: $\qquad$ Products: $\qquad$
6. Acid rain is formed when rain water mixes with sulfur dioxide gas.

Reactants: $\qquad$ Products: $\qquad$
7. $2 \mathrm{NaBr}+\mathrm{Ca}(\mathrm{OH})_{2} \rightarrow \mathrm{CaBr}_{2}+2 \mathrm{NaOH}$

Reactants: $\qquad$ Products: $\qquad$
8. $\mathrm{C}_{6} \mathrm{H}_{12} \mathrm{O}_{6}+6 \mathrm{O}_{2} \rightarrow 6 \mathrm{CO}_{2}+6 \mathrm{H}_{2} \mathrm{O}+$ Chemical Energy

Reactants: $\qquad$ Products: $\qquad$
9. HCl and $\mathrm{NH}_{3} \mathrm{OH}$ are made when water is added to $\mathrm{NH}_{3} \mathrm{Cl}$.

Reactants: $\qquad$ Products: $\qquad$
10. When lead nitrate is added to sodium chloride a white precipitate is formed.

Reactants: $\qquad$ Products: $\qquad$

Solve each of the following... remember the law of conservation of mass: Mass of reactants=Mass of products
11. A 10.0 g sample of magnesium reacts with oxygen to form 16.6 g of magnesium oxide. How many grams of oxygen reacted?
12. From a laboratory process designed to separate water into hydrogen and oxygen gas, a student collected 10.0 g of hydrogen and 79.4 g of oxygen. How much water was originally involved in the process?
13. A student carefully placed 15.6 g of sodium in a reactor supplied with an excess quantity of chloride gas. When the reaction was complete, the student obtained 39.7 g of sodium chloride. How many grams of chloride gas reacted? How many grams of sodium reacted?
14. In a flask, 10.3 g of aluminum reacted with 100.0 g of liquid bromine to form aluminum bromide. After the reaction, no aluminum remained and 8.5 grams of bromine remained unreacted. How many grams of bromine reacted? How many grams of compound were formed?
15. A 3.5 kg iron shovel is left outside through the winter. The shovel, now orange with rust, is rediscovered in the spring. Its mass is 3.7 kg . How much oxygen combined with the iron?
16. When 5.0 g of tin reacts with hydrochloric acid, the mass of the products, tin chloride and hydrogen, totals 8.1 g . How many grams of hydrochloric acid were used?

