

Read Ch. 3.1-3.2, pp 54-65 in your text then answer the following questions.

- Classify each of the following as a physical or chemical property.
 - Iron and oxygen form rust.
 - Iron is more dense than aluminum.
 - Magnesium burns brightly when ignited.
 - Oil and water do not mix.
 - Mercury melts at -39°C .
- Classify each of the following as an *intensive* or an *extensive* property.
 - Copper has a density of 8.96 g/cm^3 .
 - Nitrogen boils at -196°C .
 - A sample of water has a mass of 35.2 g .
 - Gold has a metallic yellow color.
 - A nail is 5.10 cm long.
- Classify each of the following as a physical or chemical change.
 - Aluminum reacts with copper(II) chloride.
 - Hydrogen gas is formed when zinc comes in contact with acid.
 - Liquid water becomes water vapor.
 - Molten iron cools and solidifies.
 - Sodium metal and chlorine gas form when NaCl is electrolyzed.
- 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. What mass of water was originally involved in the process?
- 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 g of bromine remained unreacted. How many grams of bromine reacted? How many grams of compound were formed?
- Solve each of the following using the concept of conservation of mass.
 - In the complete reaction of 22.99 g of sodium with 35.45 g of chlorine, what mass of sodium chloride is formed?
 - A 12.2-g sample of X reacts with a sample of Y to form 78.9 g of XY what is the mass of Y that reacted?

- Look at the following diagram. Determine whether a chemical or physical change is depicted. Explain your choice.

