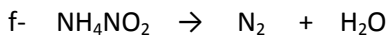
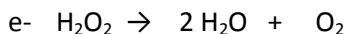
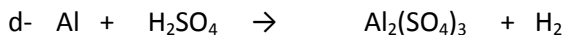
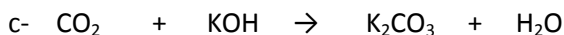
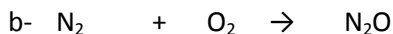
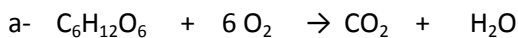
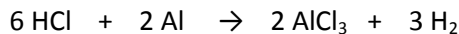


Chapter 4 worksheet

1. Balance the following equations:



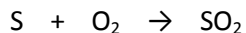
2. During a chemical reaction 15 g of hydrochloric acid (HCl) reacts with 25 g of aluminum (Al) to produce 29 g of aluminum chloride (AlCl_3) and some hydrogen gas (H_2) is released. The balanced equation for this reaction is as follows:



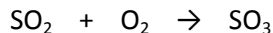
What mass of hydrogen gas was released? _____

3. a- Acid rain is caused by the burning fossil fuels and mineral refineries. The steps by which acid rain is produced are explained below.

Step 1: Sulfur (S) combines with oxygen (O_2) in the atmosphere to produce sulfur dioxide (SO_2).



Step 2: The sulfur dioxide (SO_2) combines with oxygen (O_2) in the atmosphere to produce sulfur trioxide (SO_3).



Step 3: The sulfur trioxide (SO_3) combines with water vapor (H_2O) in the air to produce sulfuric acid (H_2SO_4), which then falls as acid rain.



Using the steps above determine how much sulfuric acid was produced if 15 g of sulfur and 18 g of oxygen were used to produce the sulfur dioxide. All the sulfur dioxide bonded with 34 g of oxygen to produce sulfur trioxide. The sulfur trioxide bonded with 17 g of water vapor to produce the sulfuric acid.

How much sulfuric acid was produced? _____

b- What could you do to neutralize a lake that has become acidic?

4. When solutions of hydrochloric acid (HCl) and potassium hydroxide (KOH) are mixed, the substances will react with each other.

a- What type of chemical reaction is involved? _____

b- What two products will be produced once the reaction has occurred?

5. What is the difference between an oxidizing agent and a fuel?

6. Does each example refer to rapid, slow or spontaneous combustion?

- A fire starts because of a gasoline soaked rug

- A scratched bike has rust on it

- A family is roasting marshmallows on a camp fire

- Many fruit rot quickly when cut and left in open air

7. Give three differences between cellular respiration and photosynthesis.

a _____

b _____

c _____

8. Give two reasons our planet would die if all trees were cut down.

a _____

b _____
