Synthesis Reaction: $a + b \rightarrow ab$ $2H_2(g) + O_2(g) \rightarrow 2H_2O(g)$

Decomposition Reaction: ab → a + b

2H₂O(I) electric / current 2H₂(g) + O₂(g)

Single-Displacement Reaction: a + bc → ac + b d + bc → bd + c Zn(s) + Cu(NO₃)₂(aq) → Zn(NO₃)₂(aq) + Cu(s)

Double-Displacement Reaction: ab + cd → ad + cb AgNO₃(aq) + NaCl(aq) → AgCl(s) + NaNO₃(aq)

Combustion Reaction: $ab + O_2 \rightarrow oxide of a + oxide of b$ $CH_4(g) + 2O_2(g) \rightarrow CO_2(g) + 2H_2O(g)$ Name

Date

Class

Basic Concepts Transparencies

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Types of Chemical Reactions

- 1. Describe the type of process occurring in a synthesis reaction.
- 2. Describe the type of process occurring in a decomposition reaction.
- 3. Describe the type of process occurring in a single-displacement reaction.
- 4. Describe the type of process occurring in a double-displacement reaction.
- 5. Describe the type of process occurring in a combustion reaction.
- 6. Classify each of the following reactions according to type.

a.
$$2SO_3(g) \rightarrow 2SO_2(g) + O_2(g)$$

b.
$$2C_2H_6(g) + 7O_2(g) \rightarrow 4CO_2(g) + 6H_2O(g)$$

c.
$$Mg(s) + Pb(NO_3)_2(aq) \rightarrow Mg(NO_3)_2(aq) + Pb(s)$$

d.
$$Cu(s) + F_2(g) \rightarrow CuF_2(s)$$

e.
$$FeCl_2(aq) + K_2CO_3(aq) \rightarrow FeCO_3(s) + 2KCl(aq)$$

CLASSIFYING CHEMICAL REACTIONS Name_



. sify the following reactions as synthesis, decomposition, single replacement or double replacement.

1.
$$2KCIO_3$$
 \rightarrow $^{"}$ $2KCI + 3O_2$

3. Mg + 2HCl
$$\rightarrow$$
 MgCl₂ + H₂

4.
$$2H_2 + O_2 \rightarrow 2H_2O$$

5.
$$2Al + 3NiBr_2 \rightarrow 2AlBr_3 + 3Ni$$

6.
$$4AI + 3O_2 \rightarrow 2AI_2O_3$$

.
$$2NaCl \rightarrow 2Na + Cl$$

8.
$$CaCl_2 + F_2 \rightarrow CaF_1 + Cl_2$$

10.
$$N_2 + 3H_2 \rightarrow 2NH_3$$

11.
$$2H_2O_2 \rightarrow 2H_2O_2 + O_2$$

12.
$$(NH_4)_2SO_4 + Ba(NO_3)_2 \rightarrow BaSO_4 + 2NH_4NO_3$$

13.
$$Mgl_2 + Br_2 \rightarrow MgBr_2 + l_2$$

¹4.
$$SO_3 + H_2O \rightarrow H_2SO_4$$

15.
$$6KCI + Zn_3(PO_4)_2 \rightarrow 3ZnCl_2 + 2K_3PO_4$$

PREDICTING PRODUCTS OF CHEMICAL REACTIONS

	(0)
Name	(26)

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Predict the products of the reactions below. Then, write the balanced equation and classify the reaction. **Acto Formulas are listed an table K

- 1. magnesium bromide + chlorine
- 2. aluminum + iron (ill) exide
- 3. silver nitrate + zinc chloride
- 4. hydrogen peroxide i Forms
- 5. zinc + hydrochloric acid
- suifuric acid + sodium hydroxide
- 7. sodium + hydrogen
- $\frac{1}{2}$ 8. acetic acid + copper