Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Period:\_\_\_\_\_ Date:\_\_\_\_\_\_\_\_\_\_\_\_\_

**Review Unit 8: Chemical Reactions**

1. What is a physical change?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. What is a chemical change?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Circle all of the following that indicate that a chemical change may have taken place.

a. precipitate forms

b. color change

c. gas forms

d. change of state

E. temperature change

1. Label the changes as chemical or physical:

a) iron oxidizing to form rust \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

b) ice melting to form liquid water \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

c) methane gas burning \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

d) silver corroding \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

e) a crayon breaking \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. What do the following symbols mean when they are used in chemical equations?

a. *(l)* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

b. *(aq)* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

c. *(g)* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

d. *(s)* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Label each of the following: ***product***, ***reactants***, ***subscript***, ***coefficient***, ***yields***

**H2 + Cl2 2 HCl**

1. How many atoms of each element are represented by:

a)  **2 Na2SO4** Na = \_\_\_\_ S = \_\_\_\_ O = \_\_\_\_

b) **3 Ba3(PO4)2**Ba = \_\_\_\_ P = \_\_\_\_ O = \_\_\_\_

1. According to the law of conservation of mass, matter can neither be \_\_\_\_\_\_\_\_\_\_\_\_\_ nor \_\_\_\_\_\_\_\_\_\_\_\_\_. Atoms can only \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
2. After a chemical reaction, the mass of products is \_\_\_\_\_ equal to the original mass of reactants.

A. never B. sometimes C. always

1. What does it mean to “balance” a chemical equation?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Consider the double-replacement reaction: Ba(HCO3)2 + FeSO4  \_\_\_\_\_\_ + \_\_\_\_\_\_

Which of the following would you expect to be one of the products for this reaction?

A. BaFe

B. SO4Ba

C. FeBa

D. Fe(HCO3)2

1. A combustion reaction is always a reaction of a hydrocarbon with \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, forming

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_.

**For questions #22-29,**

**CLASSIFY** the reaction as one of the five types by writing in the blank.

**BALANCE** the reaction using coefficients when necessary.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_22. \_\_\_\_ Zn + \_\_\_\_ HNO3 🡪 \_\_\_\_ Zn(NO3)2 + \_\_\_\_ H2

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_23. \_\_\_\_ CO2 + \_\_\_\_ H2O 🡪 \_\_\_\_ H2CO3

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_24. \_\_\_\_ CaCO3 + \_\_\_\_ HCl 🡪 \_\_\_\_ CaCl2 + \_\_\_\_ H2CO3

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_25. \_\_\_\_ AgNO3 + \_\_\_\_Pb 🡪 \_\_\_\_ Pb(NO3)2 + \_\_\_\_ Ag

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_26. \_\_\_\_ K2SO3 🡪 \_\_\_\_ K2S + \_\_\_\_ O2

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_27. \_\_\_\_ C5H12 + \_\_\_\_ O2 🡪 \_\_\_\_ CO2 + \_\_\_\_ H2O

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_28. \_\_\_\_ C2H6 + \_\_\_\_ O2 🡪 \_\_\_\_ CO2 + \_\_\_\_ H2O

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_29. \_\_\_\_ Cs + \_\_\_\_ H2O 🡪 \_\_\_\_ CsOH + \_\_\_\_ H2

**HONORS ONLY**

1. Predict the products and balance the equations for the reactions below.

a) Synthesis: Ba + O2 🡪

b) Decomposition: AlCl3 🡪

c) Double Replacement: H2SO4 + MgCO3 🡪

d) Combustion: C3H8 + O2 🡪

e) Single Replacement Li + CuCl2 🡪