***Balance Equation More Practice***

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Date:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Classifying and Balancing Equations Multiple Choice**

\_\_\_\_\_1. During a chemical reaction,

a. new elements are produced c. atoms are destroyed

b. atoms are rearranged d. elements are destroyed

\_\_\_\_\_2. An equation is balanced by

a. changing subscripts c. erasing elements as necessary

b. adding coefficients d. adding elements as necessary

\_\_\_\_\_3 An atom’s ability to undergo chemical reactions is determined by its

a. protons b. innermost electrons c. neutrons d. outermost electrons

For questions 4-9, add coefficients to balance the reaction when necessary.

4. Zn + H2SO4 -----> ZnSO4 + H2

5. H2CO3 -----> CO2 + H2O

6. CaCO3 + HCl ------> CaCl2 + H2CO3

7. AgNO3 + Zn -----> Zn (NO3)2 + Ag

8. C3H8 + O2 -----> CO2 + H2O

9. C2H5OH + O2 -----> CO2 + H2O

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**Chemical Equations**

When a piece of magnesium is added to dilute hydrochloric acid, fizzing occurs and hydrogen gas is released from the mixture. The fizzing is evidence that a(n) (10)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ has occurred between magnesium and hydrochloric acid. The name given to either magnesium or hydrochloric acid in this case is (11)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ , and the hydrogen gas that is released is called a(n) (12)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of the reaction. Some other indications that reactions have occurred might be change of color or (13)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ , or formation of a solid (14)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ . If a thermometer is placed into a mixture undergoing chemical reaction, you might observed that the temperature has gone up or down, indicating that (15)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ was being released or absorbed. The short hand form by which a reaction is represented is called a(n) (16) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ . In using this method of representation, you must satisfy the (17)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ , a principle that states that matter is neither created nor destroyed. In order to satisfy this principle, you normally select the proper numerical (18)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to indicate the number of units of each substance taking part in the chemical change.

# Balance the following

19. \_\_\_\_\_ P + \_\_\_\_\_ O2🡪 \_\_\_\_\_ P4O10

20. \_\_\_\_\_ Fe(OH)3 🡪 \_\_\_\_\_ Fe2O3 + \_\_\_\_\_ H2O

21. \_\_\_\_\_ Na2CO3 + \_\_\_\_\_ Ca(OH)2🡪 \_\_\_\_\_ NaOH+ \_\_\_\_\_ CaCO3

22. \_\_\_\_\_ K3PO4+ \_\_\_\_\_ MgCl2🡪 \_\_\_\_\_ Mg3(PO4)2 + \_\_\_\_\_ KCl

23. \_\_\_\_\_ Mg(HCO3)2 + \_\_\_\_\_ HCl 🡪 MgCl2 + \_\_\_\_\_ H2O + \_\_\_\_\_ CO2

Balance these equations.

25. N2 + H2 🡪 NH3

26. KClO3 🡪 KCl + O2

27. NaCl + F2 🡪 NaF + Cl2

28. AgNO3 + MgCl2 🡪 AgCl + Mg(NO3)2

29. AlBr3 + K2SO4 🡪 KBr + Al2(SO4)3

30. C8H18 + O2 🡪 CO2 + H2O

31. P + O2 🡪 P2O5