*Formulas and Equations*

Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Hour \_\_\_\_\_

Write the number of atoms of each element in the compound. Extra credit: research the name of the compound, one is done for you

1. NO2 Nitrogen \_\_\_\_ Oxygen \_\_\_\_ (\_\_\_\_\_Nitrogen Dioxide\_\_\_\_\_)

2. Al2O3 Aluminum \_\_\_\_ Oxygen \_\_\_\_ (\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_)

3. C2H2 Carbon \_\_\_\_ Hydrogen \_\_\_\_ (\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_)

4. Na2CO3 Sodium \_\_\_\_ Carbon \_\_\_\_ Oxygen \_\_\_\_ (\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_)

5. C6H12O6 Carbon \_\_\_\_ Hydrogen \_\_\_\_ Oxygen \_\_\_\_ (\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_)

Write the name and number of atoms of each element in the compound. One is done for you.

6. NH3  Nitrogen 1, Hydrogen 3­­­­­­­­­­­\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

7. CO2 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

8. NaOH \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

9. Br3KAu\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

10. Hg2Mn \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

11. PbLi2 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Balance each equation by filling in the missing numbers. (use pencil...in case of a mistake)

12. \_\_\_Mg + O2 \_\_\_MgO (magnesium oxide)

13. \_\_\_Na + Cl2  \_\_\_NaCl (sodium chloride)

14. P4 + \_\_\_O2 \_\_\_P2O5 (phosphorus pentoxide)

15. \_\_\_C + \_\_\_H2O C6H12O6 (glucose)

***Challenge:***

16. S8 + \_\_\_O2 \_\_\_SO2 (sulfur dioxide)

17. \_\_\_CO2 + \_\_\_H2O C6H12O6 + \_\_O2 (glucose and oxygen)

18. **\_\_\_**C4H10 + **\_\_\_**O2 **\_\_\_**CO2 + **\_\_\_**H2O (carbon dioxide and water)

*Balancing Chemical Equations…this is hard stuff…*

**1.** Complete the table by listing the different elements in each molecular formula. Include the number of each atom. (Ex: Hydrogen 2, Einsteinium 5)

|  |  |
| --- | --- |
| **Molecular Formula** | Composition (what is it made out of)  |
| H2SO4 |  |
| FeSO4 |  |
| Pb(NO3)2 |  |

**2.** Balance each of the following equations. Remember that for each element the number of atoms on either side of the equation must be equal. (hint: one question does not need to be balanced)

a. Al + O2 🡪 Al2O3 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

b. CO + H2 🡪 CH3OH \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

c. AgNO3 + NaCl 🡪 AgCl + NaNO3 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

d. Zn + HCl 🡪 ZnCl2 + H2 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

e. C12H22O11 + 🡪 C + H2O \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

f. Fe + O2 🡪 Fe3O4 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**3.** Fill in the missing chemical symbols or molecular formulas to balance the following equations.

a. 2 \_\_\_\_\_\_\_\_\_ + Cl2 🡪 2NaCl

b. \_\_\_\_\_\_\_\_\_ + F2 🡪 2HF

c. 4 \_\_\_\_\_\_\_ + O2 🡪 2Ag2O

d. Zn + H2O 🡪 ZnO + \_\_\_\_\_\_\_\_

e. SnO2 + 2C 🡪 2CO + \_\_\_\_\_\_\_\_

f. 2NO + \_\_\_\_\_\_\_ 🡪 2NO2

***4.*** *State in your own words the Law of Conservation of Mass*

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