SNC 2DO Name: _____

## Classifying Reactions and Balancing Chemical Equations

For each of the chemical reactions are listed below, complete the following:

- Balance the skeletal equation
- The type of chemical reaction (synthesis, decomposition, single displacement, or double displacement)

1.

Balance the skeletal equation: 2 Cu + _____ $O_2$ → 2 CuO

Reaction type: synthesis

2.

Balance the skeletal equation: 2 $H_2O$ → _____ $O_2$ + 2 $H_2$

Reaction type: decomposition

3.

Balance the skeletal equation: 2 Fe + 3 $H_2O$ → _____ $Fe_2O_3$ + 3 $H_2$

Reaction type: single displacement

4.

Balance the skeletal equation: 3 $H_2S$ + 2 $AsCl_3$ → _____ $As_2S_3$ + 6 HCl

Reaction type: double displacement

5.

Balance the skeletal equation: _____ $CaCO_3$ → _____ $CO_2$ + _____ CaO

Reaction type: decomposition

6.

Balance the skeletal equation: _____ $H_2S$ + 2 KOH → _____ $K_2S$ + 2 HOH

Reaction type: double displacement

7.

Balance the skeletal equation: _____ $S_8$ + 8 Fe → 8 FeS

Reaction type: synthesis

8.

Balance the skeletal equation: 3 $H_2SO_4$ + 2 Al → _____ $Al_2(SO_4)_3$ + 3 $H_2$

Reaction type: single displacement

9.

Balance the skeletal equation: _____ $H_3PO_4$ + 3 $NH_4OH$ → _____ $(NH_4)_3PO_4$ + 3 HOH

Reaction type: double displacement

10.

Balance the skeletal equation: 3 $O_2$ + 4 Al → 2 $Al_2O_3$

Reaction type: synthesis

11.
✎ Balance the skeletal equation: 3 $H_2SO_4$ + 2 $Al(OH)_3$ → ___ $Al_2(SO_4)_3$ + 6 HOH
🕮 Reaction type: double displacement

12.
✎ Balance the skeletal equation: ___ $Cl_2$ + 2 KBr → 2 KCl + ___ $Br_2$
🕮 Reaction type: single displacement

13.
✎ Balance the skeletal equation: ___ Ca + 2 HOH → ___ $Ca(OH)_2$ + ___ $H_2$
🕮 Reaction type: single displacement

14.
✎ Balance the skeletal equation: 2 $H_2O_2$ → ___ $O_2$ + 2 $H_2O$
🕮 Reaction type: decomposition

15.
✎ Balance the skeletal equation: 2 Na + ___ $Cl_2$ → 2 NaCl
🕮 Reaction type: synthesis

16.
✎ Balance the skeletal equation: ___ Zn + ___ $Pb(NO_3)_2$ → ___ $Zn(NO_3)_2$ + ___ Pb
🕮 Reaction type: single displacement

17.
✎ Balance the skeletal equation: 2 NaI + ___ $Pb(NO_3)_2$ → 2 $NaNO_3$ + ___ $PbI_2$
🕮 Reaction type: double displacement

18
✎ Balance the skeletal equation: ___ $P_4$ + 5 $O_2$ → 2 $P_2O_5$
🕮 Reaction type: synthesis

19.
✎ Balance the skeletal equation: ___ $NH_4NO_3$ → 2 $H_2O$ + ___ $N_2O$
🕮 Reaction type: decomposition

20.
✎ Balance the skeletal equation: ___ $CaI_2$ + 2 $AgNO_3$ → ___ $Ca(NO_3)_2$ + 2 AgI
🕮 Reaction type: double displacement