

#### +WS 4.1 Balancing Equations / Formula Weight

For 1-6, take inventory of each side and determine whether the equation is balanced (Y) or not (N):

- $H_2 + Cl_2 \rightarrow 2 HCl$  \_\_\_\_
- $H_2 + O_2 \rightarrow 2 H_2O$  \_\_\_\_
- $3 F_2 + N_2 \rightarrow 2 NF_3$  \_\_\_\_
- $2 KClO_3 \rightarrow 2 K + Cl_2 + 3 O_2$  \_\_\_\_
- $3 Na + 3 H_2O \rightarrow 3 NaOH + H_2$  \_\_\_\_
- $3 K_2CO_3 + 2 Al(OH)_3 \rightarrow 6 KOH + Al_2(CO_3)_3$  \_\_\_\_

For 7-26, balance the equation by writing in the appropriate coefficients (lowest whole-numbers). Check your answers by taking inventory (like above). **HINT:** use a pencil!!!

- \_\_\_\_ K + \_\_\_\_ S  $\rightarrow$  \_\_\_\_  $K_2S$
- \_\_\_\_ Li + \_\_\_\_  $O_2 \rightarrow$  \_\_\_\_  $Li_2O$
- \_\_\_\_  $N_2$  + \_\_\_\_  $O_2 \rightarrow$  \_\_\_\_  $N_2O$
- \_\_\_\_  $N_2$  + \_\_\_\_  $H_2 \rightarrow$  \_\_\_\_  $NH_3$
- \_\_\_\_ Fe + \_\_\_\_  $O_2 \rightarrow$  \_\_\_\_  $Fe_2O_3$
- \_\_\_\_ KBr  $\rightarrow$  \_\_\_\_ K + \_\_\_\_  $Br_2$
- \_\_\_\_  $MgCl_2 \rightarrow$  \_\_\_\_ Mg + \_\_\_\_  $Cl_2$
- \_\_\_\_  $Al_2O_3 \rightarrow$  \_\_\_\_ Al + \_\_\_\_  $O_2$
- \_\_\_\_  $FeBr_3$  + \_\_\_\_  $F_2 \rightarrow$  \_\_\_\_  $FeF_3$  + \_\_\_\_  $Br_2$
- \_\_\_\_  $NH_4OH \rightarrow$  \_\_\_\_  $NH_3$  + \_\_\_\_  $H_2O$
- \_\_\_\_ Na + \_\_\_\_  $H_2O \rightarrow$  \_\_\_\_ NaOH + \_\_\_\_  $H_2$
- \_\_\_\_  $NH_3$  + \_\_\_\_  $O_2 \rightarrow$  \_\_\_\_ NO + \_\_\_\_  $H_2O$
- \_\_\_\_ BaO + \_\_\_\_ HCl  $\rightarrow$  \_\_\_\_ BaCl<sub>2</sub> + \_\_\_\_  $H_2O$
- \_\_\_\_  $Sn_3(BO_3)_4 \rightarrow$  \_\_\_\_ Sn + \_\_\_\_ B + \_\_\_\_  $O_2$
- \_\_\_\_  $H_3PO_4$  + \_\_\_\_ Ca(OH)<sub>2</sub>  $\rightarrow$  \_\_\_\_ Ca<sub>3</sub>(PO<sub>4</sub>)<sub>2</sub> + \_\_\_\_ H(OH) (hint: balance the (OH) separate from the (H))
- \_\_\_\_  $C_5H_{12}O$  + \_\_\_\_  $O_2 \rightarrow$  \_\_\_\_  $CO_2$  + \_\_\_\_  $H_2O$
- \_\_\_\_  $Al_2O_3$  + \_\_\_\_ C + \_\_\_\_  $Cl_2 \rightarrow$  \_\_\_\_ AlCl<sub>3</sub> + \_\_\_\_ CO
- \_\_\_\_  $SiF_4$  + \_\_\_\_  $H_2O \rightarrow$  \_\_\_\_  $H_4SiO_4$  + \_\_\_\_  $H_2SiF_6$
- \_\_\_\_  $HNO_3$  + \_\_\_\_  $P_4O_{10} \rightarrow$  \_\_\_\_  $N_2O_5$  + \_\_\_\_  $H_3PO_4$  (hint: balance the phosphorus first)
- \_\_\_\_  $NH_3$  + \_\_\_\_  $NO_2 \rightarrow$  \_\_\_\_  $N_2O$  + \_\_\_\_  $H_2O$  (hint: all #'s will be less than 10)

For #27 - 34, Use a periodic table to determine the formula mass (atomic weight) of the following: use ans. bank...

- $N_2$  \_\_\_\_
- $H_2O$  \_\_\_\_
- $Ca(OH)_2$  \_\_\_\_
- $Al_2(PO_4)_3$  \_\_\_\_
- $C_3H_7OH$  \_\_\_\_
- $AgNO_3$  \_\_\_\_
- $N_2O_5$  \_\_\_\_
- $(NH_4)_2HPO_4$  \_\_\_\_

Ans (RO+2) (#27-34): 28 18 44 60 74 108 132 170 194 339