

+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 ____ BaCl₂ + ____ H_2O
- ____ $Sn_3(BO_3)_4 \rightarrow$ ____ Sn + ____ B + ____ O_2
- ____ H_3PO_4 + ____ Ca(OH)₂ \rightarrow ____ Ca₃(PO₄)₂ + ____ 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 + ____ $Cl_2 \rightarrow$ ____ AlCl₃ + ____ 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