+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):

1. $H_2 + O_2 \rightarrow 2\,HCl$ ____
2. $H_2 + O_2 \rightarrow 2\,H_2O$ ____
3. $3\,F_2 + N_2 \rightarrow 2\,NF_3$ ____
4. $2\,KClO_3 \rightarrow 2\,K + Cl_2 + 3\,O_2$ ____
5. $3\,Na + 3\,H_2O \rightarrow 3\,NaOH + H_2$ ____
6. $3\,K_2CO_3 + 2\,Al(OH)_3 \rightarrow 6\,KOH + Al_2(CO_3)_3$ ____

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!!!*

7. ___ K + ___ S ---> ___ K_2S
8. ___ Li + ___ O_2 ---> ___ Li_2O
9. ___ N_2 + ___ O_2 ---> ___ N_2O
10. ___ N_2 + ___ H_2 ---> ___ NH_3
11. ___ Fe + ___ O_2 ---> ___ Fe_2O_3
12. ___ KBr ---> ___ K + ___ Br_2
13. ___ $MgCl_2$ ---> ___ Mg + ___ Cl_2
14. ___ Al_2O_3 ---> ___ Al + ___ O_2
15. ___ $FeBr_3$ + ___ F_2 ---> ___ FeF_3 + ___ Br_2
16. ___ NH_4OH ---> ___ NH_3 + ___ H_2O
17. ___Na + ___H_2O ---> ___NaOH + ___H_2
18. ___NH_3 + ___O_2 ---> ___NO + ___H_2O
19. ___ BaO + ___ HCl ---> ___ $BaCl_2$ + ___ H_2O
20. ___ $Sn_3(BO_3)_4$ ---> ___ Sn + ___ B + ___ O_2
21. ___ H_3PO_4 + ___ $Ca(OH)_2$ ---> ___ $Ca_3(PO_4)_2$ + ___ H(OH) (hint- balance the (OH) separate from the (H))
22. ___ $C_5H_{12}O$ + ___ O_2 ---> ___ CO_2 + ___ H_2O
23. ___ Al_2O_3 + ___ C + ___ Cl_2 ---> ___ $AlCl_3$ + ___ CO
24. ___ SiF_4 + ___ H_2O ---> ___ H_4SiO_4 + ___ H_2SiF_6
25. ___ HNO_3 + ___ P_4O_{10} ---> ___ N_2O_5 + ___ H_3PO_4 (hint- balance the phosphorus first)
26. ___ NH_3 + ___ NO_2 ---> ___ 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...

27. N_2 _____
28. H_2O _____
29. $Ca(OH)_2$ _____
30. $Al_2(PO_4)_3$ _____
31. C_3H_7OH _____
32. $AgNO_3$ _____
33. N_2O_5 _____
34. $(NH_4)_2HPO_4$ _____

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