

NAME _____

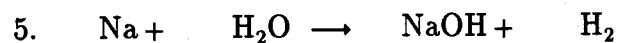
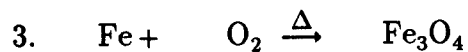
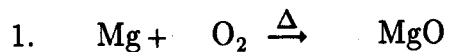
SECTION _____ DATE _____

INSTRUCTOR _____

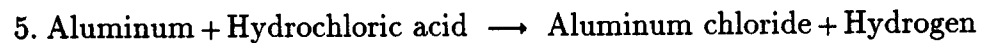
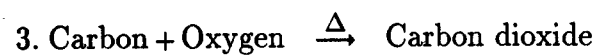
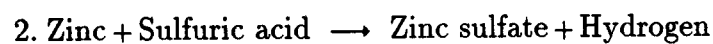
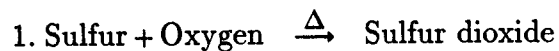
EXERCISE 6

Equation Writing and Balancing I

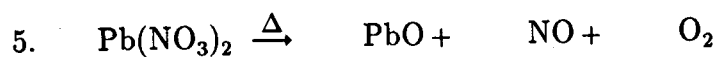
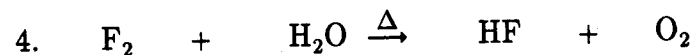
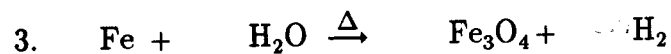
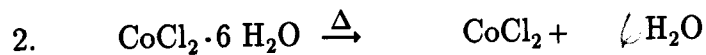
Balance the following equations:



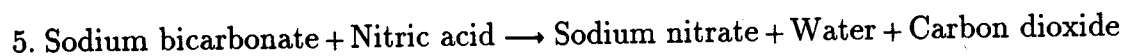
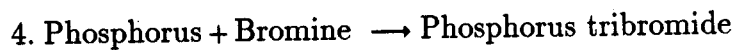
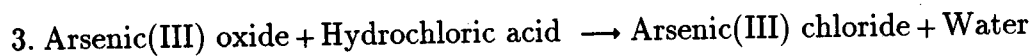
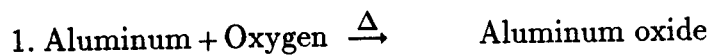
Beneath each word equation write the formula equation and balance it. Remember that oxygen and hydrogen are diatomic molecules.



Balance the following equations:



Beneath each word equation write and balance the formula equation. Oxygen, hydrogen, and bromine are diatomic molecules



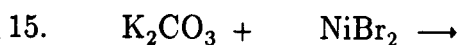
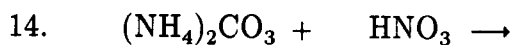
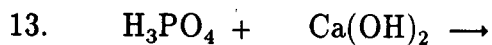
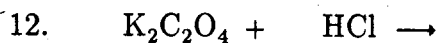
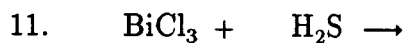
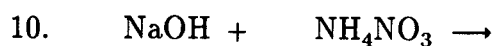
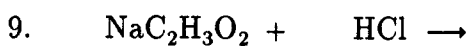
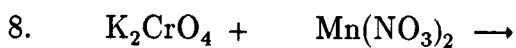
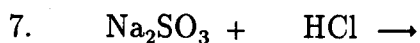
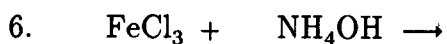
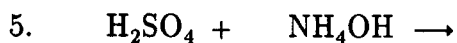
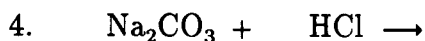
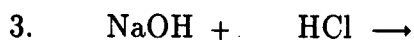
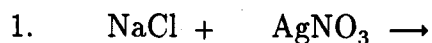
NAME _____

SECTION _____ DATE _____

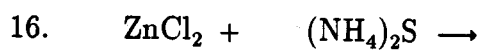
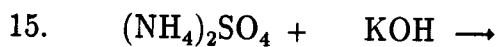
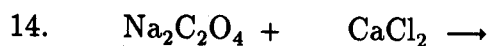
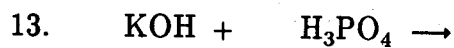
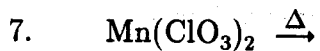
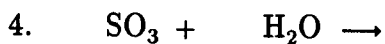
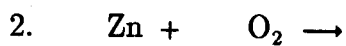
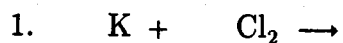
INSTRUCTOR _____

EXERCISE 7**Equation Writing and Balancing II**

Complete and balance the following double displacement reaction equations (assume all reactions will go):



Complete and balance the following equations. (Combination, 1-4; Decomposition, 5-8; Single displacement, 9-12; Double displacement, 13-16.)



NAME _____

SECTION _____ DATE _____

INSTRUCTOR _____

EXERCISE 8

Equation Writing and Balancing III

For each of the following situations, write and balance the formula equation for the reaction which occurs.

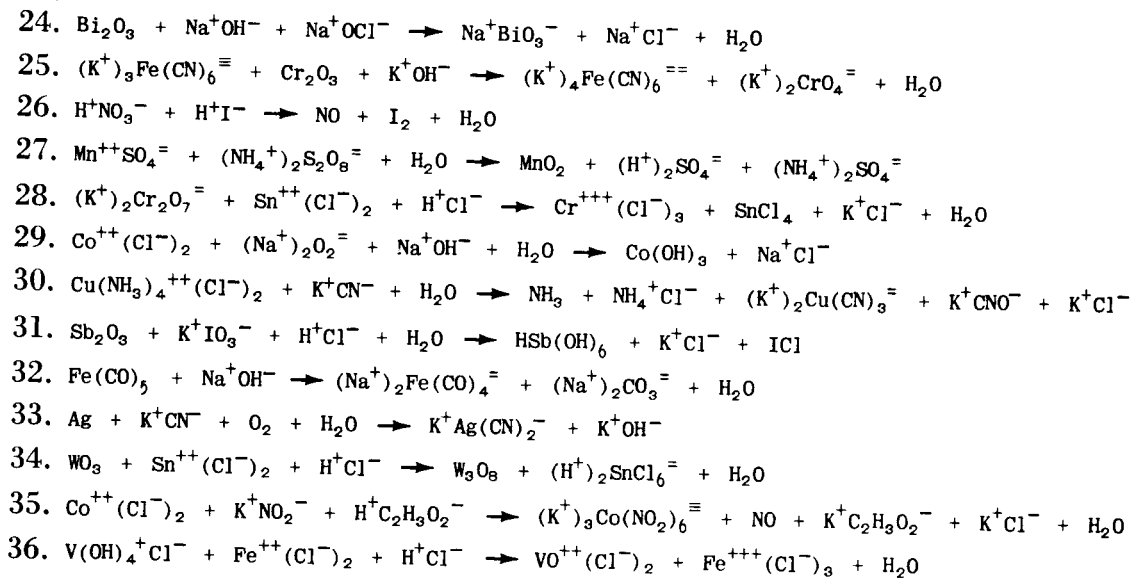
1. A strip of zinc is dropped into a test tube of hydrochloric acid.
2. Hydrogen peroxide decomposes in the presence of manganese dioxide.
3. Copper(II) sulfate pentahydrate is heated to drive off the water of hydration.
4. A piece of sodium is dropped into a beaker of water.
5. A piece of limestone (calcium carbonate) is heated in a Bunsen burner flame.
6. A piece of zinc is dropped into a solution of silver nitrate.
7. Hydrochloric acid is added to a sodium carbonate solution.
8. Potassium chlorate is heated on the presence of manganese dioxide.
9. Hydrogen gas is burned in air.
10. Sulfuric acid solution is reacted with sodium hydroxide solution.



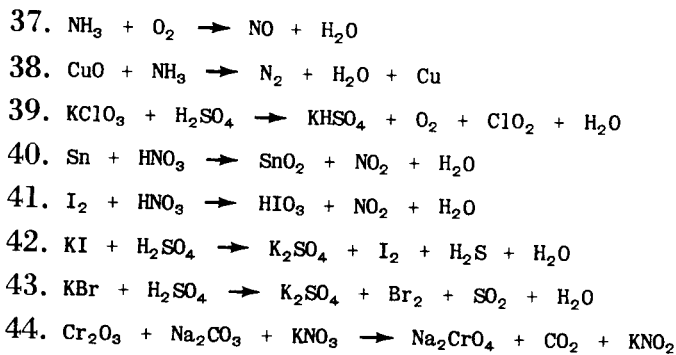
SUPPLEMENTARY PROBLEMS

Write balanced ionic ~~and molecular~~ equations for the following.

8. $\text{CuS} + \text{H}^+\text{NO}_3^- \text{ (dilute)} \rightarrow \text{Cu}^{++}(\text{NO}_3^-)_2 + \text{S} + \text{H}_2\text{O} + \text{NO}$
9. $\text{K}^+\text{MnO}_4^- + \text{H}^+\text{Cl}^- \rightarrow \text{K}^+\text{Cl}^- + \text{Mn}^{++}(\text{Cl}^-)_2 + \text{H}_2\text{O} + \text{Cl}_2$
10. $\text{Fe}^{++}(\text{Cl}^-)_2 + \text{H}_2\text{O}_2 + \text{H}^+\text{Cl}^- \rightarrow \text{Fe}^{+++}(\text{Cl}^-)_3 + \text{H}_2\text{O}$
11. $\text{As}_2\text{S}_3 + \text{H}^+\text{NO}_3^- \text{ (conc.)} \rightarrow \text{H}_3\text{AsO}_4 + \text{H}^+\text{HSO}_4^- + \text{H}_2\text{O} + \text{NO}_2$
12. $\text{Cu} + \text{H}^+\text{NO}_3^- \text{ (conc.)} \rightarrow \text{Cu}^{++}(\text{NO}_3^-)_2 + \text{H}_2\text{O} + \text{NO}_2$
13. $\text{Cu} + \text{H}^+\text{NO}_3^- \text{ (dilute)} \rightarrow \text{Cu}^{++}(\text{NO}_3^-)_2 + \text{H}_2\text{O} + \text{NO}$
14. $\text{Zn} + \text{H}^+\text{NO}_3^- \text{ (dilute)} \rightarrow \text{Zn}^{++}(\text{NO}_3^-)_2 + \text{H}_2\text{O} + \text{NH}_4^+\text{NO}_3^-$
15. $(\text{Na}^+)_2\text{C}_2\text{O}_4^{=} + \text{K}^+\text{MnO}_4^- + (\text{H}^+)_2\text{SO}_4^{=} \rightarrow (\text{K}^+)_2\text{SO}_4^{=} + (\text{Na}^+)_2\text{SO}_4^{=} + \text{H}_2\text{O} + \text{Mn}^{++}\text{SO}_4^{=} + \text{CO}_2$
16. $\text{CdS} + \text{I}_2 + \text{H}^+\text{Cl}^- \rightarrow \text{Cd}^{++}(\text{Cl}^-)_2 + \text{H}^+\text{I}^- + \text{S}$
17. $\text{MnO} + \text{PbO}_2 + \text{H}^+\text{NO}_3^- \rightarrow \text{H}^+\text{MnO}_4^- + \text{Pb}^{++}(\text{NO}_3^-)_2 + \text{H}_2\text{O}$
18. $\text{Cr}^{+++}(\text{I}^-)_3 + \text{K}^+\text{OH}^- + \text{Cl}_2 \rightarrow (\text{K}^+)_2\text{CrO}_4^{=} + \text{K}^+\text{IO}_4^- + \text{K}^+\text{Cl}^- + \text{H}_2\text{O}$
Note that both the chromium and the iodine are oxidized in this reaction.
19. $(\text{Na}^+)_2\text{HASO}_3^{=} + \text{K}^+\text{BrO}_3^- + \text{H}^+\text{Cl}^- \rightarrow \text{Na}^+\text{Cl}^- + \text{K}^+\text{Br}^- + \text{H}_3\text{AsO}_4$
20. $(\text{Na}^+)_2\text{TeO}_3^{=} + \text{Na}^+\text{I}^- + \text{H}^+\text{Cl}^- \rightarrow \text{Na}^+\text{Cl}^- + \text{Te} + \text{H}_2\text{O} + \text{I}_2$
21. $\text{U}^{++++}(\text{SO}_4^{=})_2 + \text{K}^+\text{MnO}_4^- + \text{H}_2\text{O} \rightarrow (\text{H}^+)_2\text{SO}_4^{=} + (\text{K}^+)_2\text{SO}_4^{=} + \text{Mn}^{++}\text{SO}_4^{=} + \text{UO}_2^{++}\text{SO}_4^{=}$
22. $\text{I}_2 + (\text{Na}^+)_2\text{S}_2\text{O}_3^{=} \rightarrow (\text{Na}^+)_2\text{S}_4\text{O}_6^{=} + \text{Na}^+\text{I}^-$
23. $\text{Ca}^{++}(\text{OCl}^-)_2 + \text{K}^+\text{I}^- + \text{H}^+\text{Cl}^- \rightarrow \text{I}_2 + \text{Ca}^{++}(\text{Cl}^-)_2 + \text{H}_2\text{O} + \text{K}^+\text{Cl}^-$



Balance the following equations



Complete and balance the following skeleton equations by the ion-electron partial method.

