

Please complete the following reactions by 1) identifying the type of reaction, 2) predicting the products, 3) balancing the equation and 4) finishing the word equations.

- 1) hydrogen burned in oxygen (*just means hydrogen + oxygen*)
- 2) octane, C_8H_{18} , is burned in oxygen (*octane + oxygen*)
- 3) potassium metal added to cold water
- 4) potassium iodide added to lead(II) nitrate
- 5) barium hydroxide (heated)
- 6) sodium sulfite combined with acetic acid
- 7) acetelyne, C_2H_2 , is burned in oxygen
- 8) zinc metal added to mercury(II) nitrate
- 9) hydrogen gas + nitrogen gas
- 10) lithium chlorate (heated)
- 11) solid sulfur is burned in oxygen
- 12) sodium chloride added to sulfuric acid
- 13) aluminum in hydrochloric acid
- 14) ethyl alcohol, C_2H_6O , is burned in oxygen
- 15) barium nitrate added to sodium oxalate
- 16) solid iron filings added to copper(II) sulfate in solution. (*iron will be Fe^{+2} if a reaction occurs*)
- 17) sodium carbonate (heated)

- 18) electrolysis of aluminum oxide (*this chemical is the starting product and an electric current is passed through it to cause a reaction*)
- 19) sodium bicarbonate added to hydrochloric acid
- 20) calcium oxide added to water
- 21) silver metal added to copper(II) sulfate
- 22) propane, C₃H₈, is burned in oxygen
- 23) chlorine gas bubbled through a solution of calcium bromide
- 24) sulfuric acid heated gently
- 25) aluminum acetate added to calcium hydroxide

Show the total ionic and net ionic forms of the following equations. If all species are spectator ions, please indicate that no reaction takes place. REMEMBER TO BALANCE FIRST!!

- 1) $\text{Mg}(\text{NO}_3)_2 (\text{aq}) + \text{Na}_2\text{CO}_3 (\text{aq}) \rightarrow \text{MgCO}_3 (\text{s}) + \text{NaNO}_3 (\text{aq})$
- 2) strontium bromide(aq) + potassium sulfate (aq) \rightarrow strontium sulfate (s) + potassium bromide(aq)
- 3) chromium(III) nitrate(aq) + iron(II) sulfate(aq) \rightarrow chromium(III) sulfate(aq) + iron(II) nitrate (aq)

Please complete the following reactions, and show the total ionic and net ionic forms of the equation:

- 4) $\text{K}_3\text{PO}_4 (\text{aq}) + \text{Al}(\text{NO}_3)_3 (\text{aq}) \rightarrow$
- 5) $\text{BeI}_2 (\text{aq}) + \text{Cu}_2\text{SO}_4 (\text{aq}) \rightarrow$
- 6) cobalt(III) bromide + potassium sulfide \rightarrow
- 7) barium nitrate + ammonium phosphate \rightarrow
- 8) rubidium fluoride + copper (II) sulfate \rightarrow