

# PRACTICE PROBLEMS ON NET IONIC EQUATIONS

Show the complete ionic and net ionic forms of the following equations. If all species are spectator ions, please indicate that no reaction takes place. Note: you need to make sure the original equation is balanced before proceeding! A set of solubility rules are given at the end of this document.

1.  $\text{AgNO}_3(\text{aq}) + \text{KCl}(\text{aq}) \rightarrow \text{AgCl}(\text{s}) + \text{KNO}_3(\text{aq})$
2.  $\text{Mg}(\text{NO}_3)_2(\text{aq}) + \text{Na}_2\text{CO}_3(\text{aq}) \rightarrow \text{MgCO}_3(\text{s}) + \text{NaNO}_3(\text{aq})$
3. strontium bromide(aq) + potassium sulfate(aq)  $\rightarrow$  strontium sulfate(s) + potassium bromide(aq)
4. manganese(II)chloride(aq) + ammonium carbonate(aq)  $\rightarrow$  manganese(II)carbonate(s) + ammonium chloride(aq)
5. 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 complete ionic and net ionic forms of the equation:**

6.  $\text{K}_3\text{PO}_4(\text{aq}) + \text{Al}(\text{NO}_3)_3(\text{aq}) \rightarrow$
7.  $\text{BeI}_2(\text{aq}) + \text{Cu}_2\text{SO}_4(\text{aq}) \rightarrow$
8.  $\text{Ni}(\text{NO}_3)_2(\text{aq}) + \text{KBr}(\text{aq}) \rightarrow$
9. cobalt(III)bromide + potassium sulfide  $\rightarrow$
10. barium nitrate + ammonium phosphate  $\rightarrow$
11. calcium hydroxide + iron(III)chloride  $\rightarrow$
12. rubidium fluoride + copper(II)sulfate  $\rightarrow$

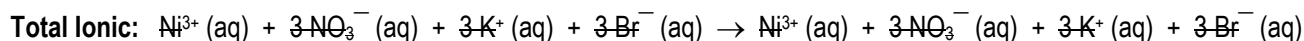
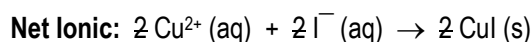
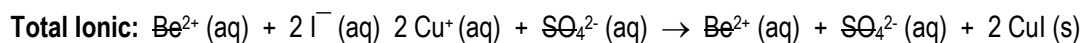
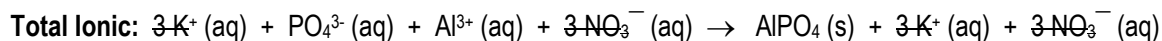
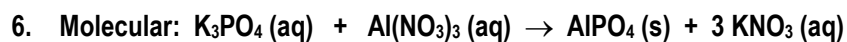
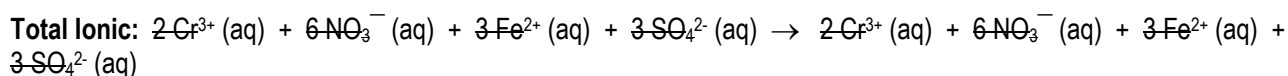
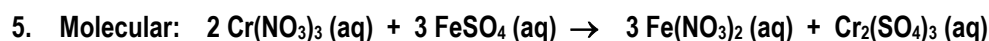
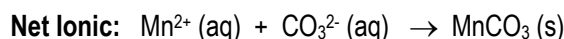
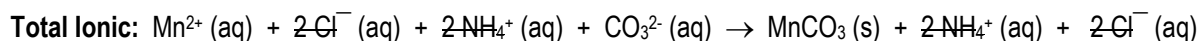
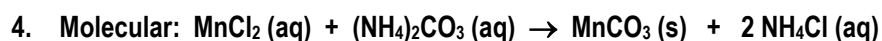
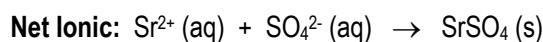
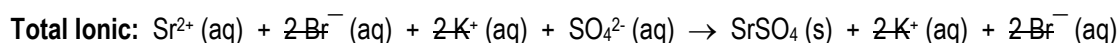
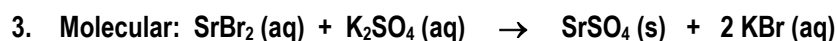
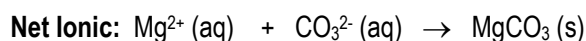
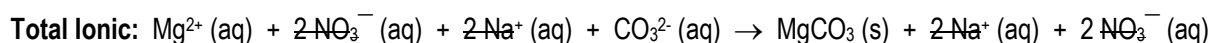
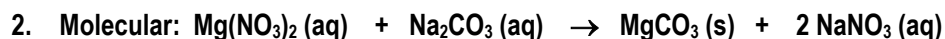
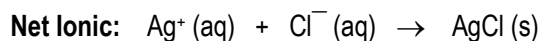
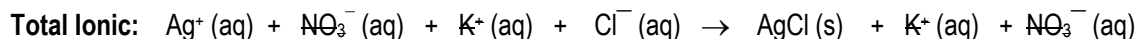
## **Solubility Rules**

1. All salts of Group IA, and ammonium are soluble.
2. All salts of nitrates, chlorates and acetates are soluble.
3. All salts of halides are soluble except those of silver(I), copper(I), lead(II), and mercury(I).
4. All salts of sulfate are soluble except for barium sulfate, lead(II) sulfate, and strontium sulfate.
5. All salts of carbonate, phosphate and sulfite are insoluble, except for those of group IA and ammonium.
6. All oxides and hydroxides are insoluble except for those of group IA, calcium, strontium and barium.
7. All salts of sulfides are insoluble except for those of Group IA and IIA elements and of ammonium.

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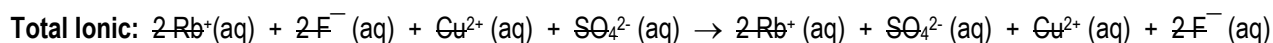
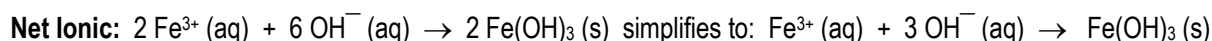
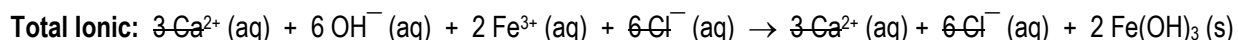
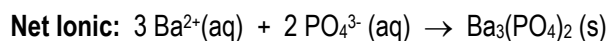
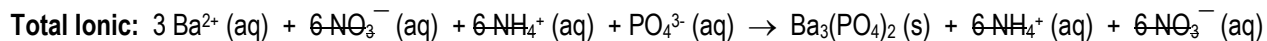
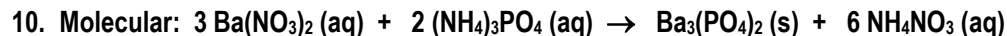
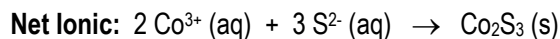
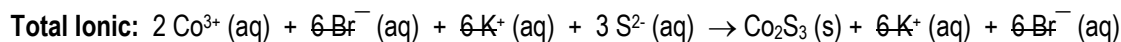
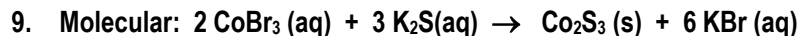
\*\*NOTES: "Total ionic equation" means "complete ionic equation." Also, you don't have to write slashes through the spectator ions as shown below.

## Answer Key to Practice Problems on Net Ionic Equations:



# PRACTICE PROBLEMS ON NET IONIC EQUATIONS

Net Ionic: No Reaction



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