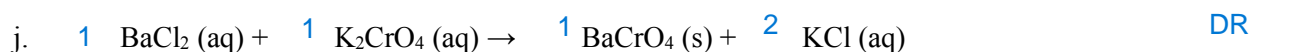
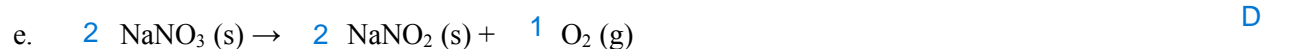
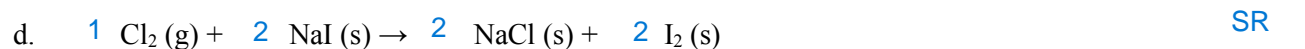
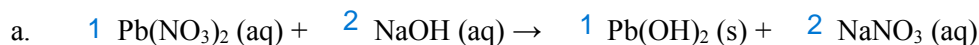


1. Balance and classify the following reactions: combination (C), decomposition (D), single replacement (SR), double replacement (DR) or combustion (CB).

Classification

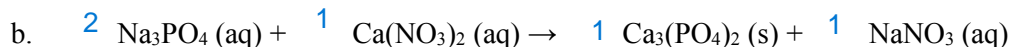


2. Balance each of the following equations. Then write the total (complete) ionic equation for each reaction. Finally write the net ionic equation for each reaction. **Remember: insoluble substances are not present as separate ions in solution.**



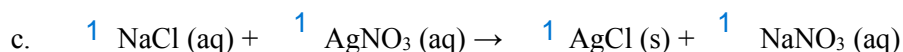
Complete Ionic equation:  $\text{Pb}^{2+}(\text{aq}) + 2\text{NO}_3^-(\text{aq}) + 2\text{OH}^-(\text{aq}) + 2\text{H}^+(\text{aq}) \rightarrow \text{Pb(OH)}_2(\text{s}) + 2\text{Na}^+ + 2\text{NO}_3^-$

Net ionic equation:  $\text{Pb}^{2+}(\text{aq}) + 2\text{OH}^-(\text{aq}) \rightarrow \text{Pb(OH)}_2(\text{s})$



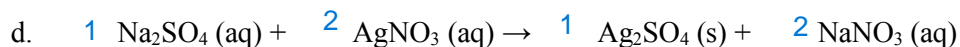
Complete Ionic equation:  $2\text{Na}_3^{+3} + 2\text{PO}_4^{-3} + 3\text{Ca}^{+2} + 3\text{NO}_3^- \rightarrow \text{Ca}_3(\text{PO}_4)_2 + 6\text{Na}^+ + 6\text{NO}_3^-$

Net ionic equation:  $\text{Cl}^- + \text{Ag}^+ \rightarrow \text{AgCl}$



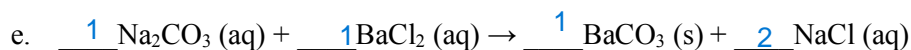
Complete Ionic equation:  $\text{Na}^+ + \text{Cl}^- + \text{Ag}^+ + \text{NO}_3^- \rightarrow \text{AgCl} + \text{Na}^+ + \text{NO}_3^-$

Net ionic equation:  $\text{Cl}^- + \text{Ag}^+ \rightarrow \text{AgCl}$



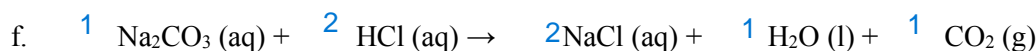
Complete Ionic equation:  $\text{Na}_2^{+2} + \text{SO}_4^{-2} + 2\text{Ag}^+ + 2\text{NO}_3^- \rightarrow \text{Ag}_2\text{SO}_4 + 2\text{Na}^+ + 2\text{NO}_3^-$

Net ionic equation:  $\text{SO}_4^{-2} + 2\text{Ag}^+ \rightarrow \text{Ag}_2\text{SO}_4$



Complete Ionic equation:  $\text{Na}_2^{+2} + \text{CO}_3^{-2} + \text{Ba}^{+2} + 2\text{Cl}^- \rightarrow \text{BaCO}_3 + 2\text{Na}^+ + 2\text{Cl}^-$

Net ionic equation:  $\text{CO}_3^{-2} + \text{Ba}^{+2} \rightarrow \text{BaCO}_3$



Complete Ionic equation:  $\text{Na}_2^{+2} + \text{CO}_3^{-2} + 2\text{H}^+ + 2\text{Cl}^- \rightarrow 2\text{Na}^+ + 2\text{Cl}^- + \text{H}_2\text{O} + \text{CO}_2$

Net ionic equation:  $\text{CO}_3^{-2} + 2\text{H}^+ \rightarrow \text{H}_2\text{O} + \text{CO}_2$