

ANSWERS

- 1 Skeleton: $\text{NaOH}_{(\text{aq})} + \text{HCl}_{(\text{aq})} \rightarrow \text{NaCl}_{(\text{aq})} + \text{H}_2\text{O}_{(\text{L})}$
 Balanced: already balanced
 Net Ionic: $\text{OH}^{-}_{(\text{aq})} + \text{H}^{+}_{(\text{aq})} \rightarrow \text{H}_2\text{O}_{(\text{L})}$
- 2 barium hydroxide – slightly soluble (assume enough does dissociate for the reaction to occur)
 Skeleton: $\text{Ba}(\text{OH})_{2(\text{aq})} + \text{HCl}_{(\text{aq})} \rightarrow \text{BaCl}_{2(\text{aq})} + \text{H}_2\text{O}_{(\text{L})}$
 Balanced: $\text{Ba}(\text{OH})_{2(\text{aq})} + 2 \text{HCl}_{(\text{aq})} \rightarrow \text{BaCl}_2 + 2 \text{H}_2\text{O}_{(\text{L})}$
 Net Ionic: $2 \text{OH}^{-}_{(\text{aq})} + 2 \text{H}^{+}_{(\text{aq})} \rightarrow 2 \text{H}_2\text{O}_{(\text{L})}$ can be reduced: $\text{OH}^{-}_{(\text{aq})} + \text{H}^{+}_{(\text{aq})} \rightarrow \text{H}_2\text{O}_{(\text{L})}$
- 3 Skeleton: $\text{LiOH}_{(\text{aq})} + \text{H}_3\text{PO}_{4(\text{aq})} \rightarrow \text{Li}_3\text{PO}_{4(\text{aq})} + \text{H}_2\text{O}_{(\text{L})}$
 Balanced: $3 \text{LiOH}_{(\text{aq})} + \text{H}_3\text{PO}_{4(\text{aq})} \rightarrow \text{Li}_3\text{PO}_{4(\text{aq})} + 3 \text{H}_2\text{O}_{(\text{L})}$
 Net Ionic: $3 \text{OH}^{-}_{(\text{aq})} + \text{H}_3\text{PO}_{4(\text{aq})} \rightarrow 3 \text{H}_2\text{O}_{(\text{L})} + \text{PO}_4^{3-}$ (since phosphoric acid is weak, it should be represented as a molecule, not as separated ions)
- 4 strontium hydroxide - slightly soluble (assume enough does dissociate for the reaction to occur)
 Skeleton: $\text{Sr}(\text{OH})_{2(\text{aq})} + \text{HNO}_3 \rightarrow \text{Sr}(\text{NO}_3)_2 + \text{H}_2\text{O}_{(\text{L})}$
 Balanced: $\text{Sr}(\text{OH})_{2(\text{aq})} + 2 \text{HNO}_3 \rightarrow \text{Sr}(\text{NO}_3)_2 + 2 \text{H}_2\text{O}_{(\text{L})}$
 Net Ionic: $2 \text{OH}^{-}_{(\text{aq})} + 2 \text{H}^{+}_{(\text{aq})} \rightarrow 2 \text{H}_2\text{O}_{(\text{L})}$ can be reduced: $\text{OH}^{-}_{(\text{aq})} + \text{H}^{+}_{(\text{aq})} \rightarrow \text{H}_2\text{O}_{(\text{L})}$
- 5 Skeleton: $\text{NaOH}_{(\text{aq})} + \text{H}_2\text{CO}_{3(\text{aq})} \rightarrow \text{Na}_2\text{CO}_{3(\text{aq})} + \text{H}_2\text{O}_{(\text{L})}$
 Balanced: $2 \text{NaOH}_{(\text{aq})} + \text{H}_2\text{CO}_{3(\text{aq})} \rightarrow \text{Na}_2\text{CO}_{3(\text{aq})} + 2 \text{H}_2\text{O}_{(\text{L})}$
 Net Ionic: $2 \text{OH}^{-}_{(\text{aq})} + \text{H}_2\text{CO}_{3(\text{aq})} \rightarrow 2 \text{H}_2\text{O}_{(\text{L})} + \text{CO}_3^{2-}$ (since carbonic acid is weak, it should be represented as a molecule, not as separated ions)
- 6 Skeleton: $\text{KOH}_{(\text{aq})} + \text{H}_2\text{SO}_{4(\text{aq})} \rightarrow 2 \text{H}_2\text{O}_{(\text{L})} + \text{K}_2\text{SO}_{4(\text{aq})}$
 Balanced: $2 \text{KOH}_{(\text{aq})} + \text{H}_2\text{SO}_{4(\text{aq})} \rightarrow 2 \text{H}_2\text{O}_{(\text{L})} + \text{K}_2\text{SO}_4$
 Net Ionic: $2 \text{OH}^{-}_{(\text{aq})} + 2 \text{H}^{+}_{(\text{aq})} \rightarrow 2 \text{H}_2\text{O}_{(\text{L})}$ can be reduced: $\text{OH}^{-}_{(\text{aq})} + \text{H}^{+}_{(\text{aq})} \rightarrow \text{H}_2\text{O}_{(\text{L})}$
- 7 calcium hydroxide - slightly soluble (assume enough does dissociate for the reaction to occur.)
 Skeleton: $\text{Ca}(\text{OH})_{2(\text{aq})} + \text{H}_2\text{CO}_{3(\text{aq})} \rightarrow \text{CaCO}_{3(\text{ppt})} + \text{H}_2\text{O}_{(\text{L})}$
 Balanced: $\text{Ca}(\text{OH})_{2(\text{aq})} + \text{H}_2\text{CO}_{3(\text{aq})} \rightarrow \text{CaCO}_{3(\text{ppt})} + 2 \text{H}_2\text{O}_{(\text{L})}$
 Net Ionic: $\text{Ca}^{2+} + 2 \text{OH}^{-} + \text{H}_2\text{CO}_{3(\text{aq})} \rightarrow \text{CaCO}_{3(\text{ppt})} + 2 \text{H}_2\text{O}_{(\text{L})}$ (since carbonic acid is weak, it should be represented as a molecule, not as separated ions)