## Dissociation and Ion Concentration

1. Write an equation to show what happens when each of the following dissolves in water.
a) $\mathrm{Li}_{3} \mathrm{PO}_{4(\mathrm{~s})}$
b) $\mathrm{MgF}_{2(\mathrm{~s})}$
c) $\mathrm{HNO}_{3(\mathrm{aq)}}$
d) $\mathrm{CH}_{3} \mathrm{OH}_{(1)}$
e) $\left(\mathrm{NH}_{4}\right)_{3} \mathrm{PO}_{4(\mathrm{~s})}$
f) $\mathrm{C}_{6} \mathrm{H}_{12} \mathrm{O}_{11 \text { (s) }}$
g) $\operatorname{Sr}(\mathrm{OH})_{2(\mathrm{~s})}$
2. Determine the concentration of aqueous sulfate ion in a $0.25 \mathrm{~mol} / \mathrm{L}$ solution of $\mathrm{Al}_{2}\left(\mathrm{SO}_{4}\right)_{3(\mathrm{aq})}$.
3. What is the $\left[\mathrm{OH}_{(\mathrm{aq})}^{-}\right]$in 0.45 M strontium hydroxide?
4. Determine the concentration of aqueous magnesium and aqueous acetate ions in a 0.75 M solution of magnesium acetate.
5. The concentration of aqueous nitrate ion in a solution of $\mathrm{Al}\left(\mathrm{NO}_{3}\right)_{3}$ is determined to be $0.50 \mathrm{~mol} / \mathrm{L}$. What is the concentration of the aluminum nitrate solution?
6. What is the concentration of aqueous ammonium ion in a solution prepared by dissolving 2.50 g of $\left(\mathrm{NH}_{4}\right)_{3} \mathrm{PO}_{4(\mathrm{~s})}$ in enough water to make 0.250 L of solution?
7. What is the mass of $\left(\mathrm{NH}_{4}\right)_{2} \mathrm{CO}_{3(\mathrm{~s})}$ that must be dissolved in enough water to make a 500.0 mL solution in which the $\left[\mathrm{NH}_{4}{ }^{+}{ }_{(\mathrm{aq})}\right]$ is $0.19 \mathrm{~mol} / \mathrm{L}$ ?
