# Module 10: Equilibrium Calculations

1. In this module, we consider two specific cases of the following general situation:
2. We mix together some chemical solutions, such that we know the identities and initial concentrations of the chemical species in solution, and we know what reaction is taking place.
3. Our goal is to determine the final concentrations of the chemical species in the solution.
4. This module will demonstrate how to do these chemical equilibrium calculations for two general types of reactions: those with very large or small values of K, and those that have an intermediate value of K.
5. For calculations involving reactions with very large or small K, we can make some simplifying assumptions, so these are mathematically easier. However, reactions with intermediate K values must be solved algebraically.
6. We’ll start with very large K. These reactions go nearly to completion. By “completion,” we mean the reactants react with one another until something runs out. So we can simplify the math by assuming the reaction *does* go to completion (essentially performing a limiting reagent calculation), and afterwards invoke equilibrium thinking.