

## Problem 3.2

### Problem Purpose

This problem will help you determine whether you have mastered the learning objectives for this unit.

### Problem Statement

The water-gas shift reaction was described in practice problem 2.1. That reaction can also take place in the reverse direction, that is as shown in equation (1). When this happens, the reaction is sometimes referred to as the reverse water gas shift. Calculate the equilibrium mole fraction of CO for a process that starts with equal amounts of carbon dioxide and hydrogen and that takes place at 2 atm and 190 °C. You will need to consult an appropriate reference source to find the necessary thermodynamic data.

