Approach to equilibrium

Consider the reaction
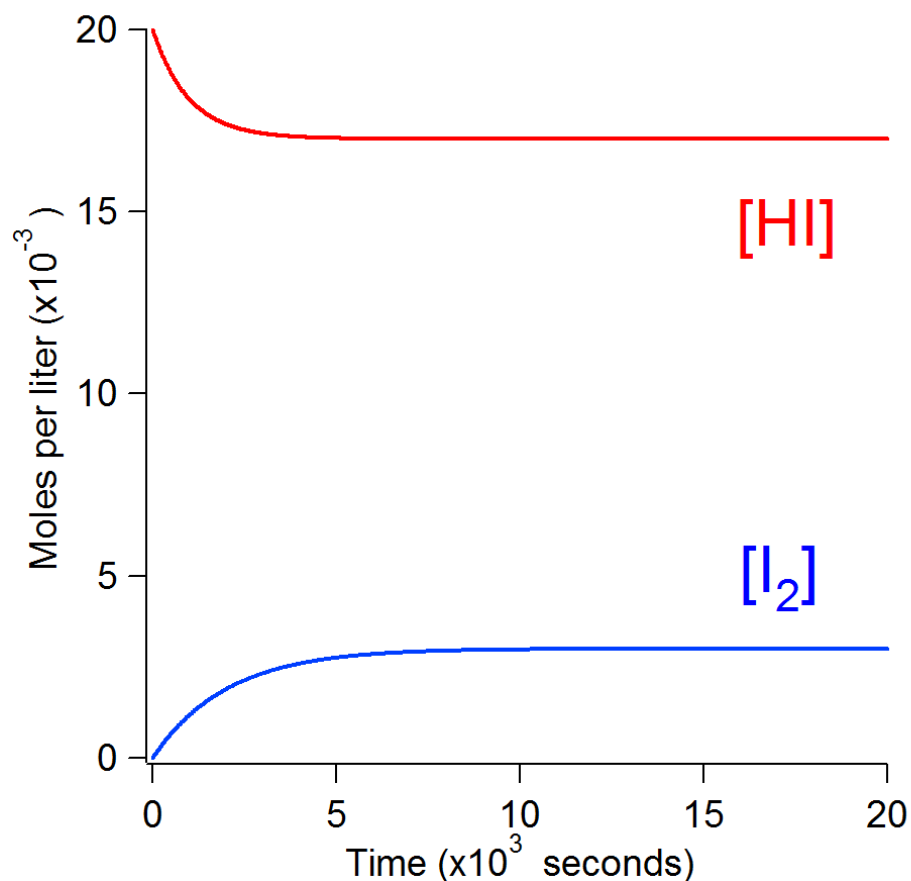
$$H_2 + I_2 \rightarrow 2\,HI$$

We can start from pure HI and we will approach an equilibrium ratio of 35.

$$K_c = \frac{c_{HI}^2}{c_{H_2} c_{I_2}}$$

Approach to equilibrium

If we start with 0.2 M HI and 0.0 M I_2 we see the following kinetics.
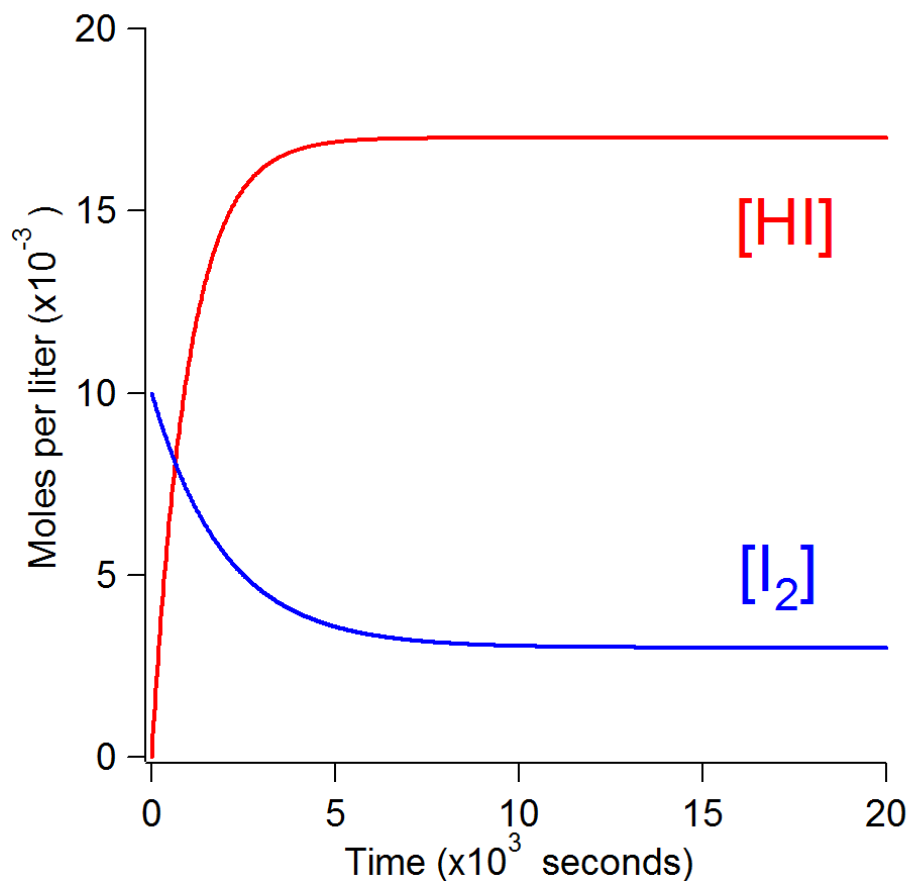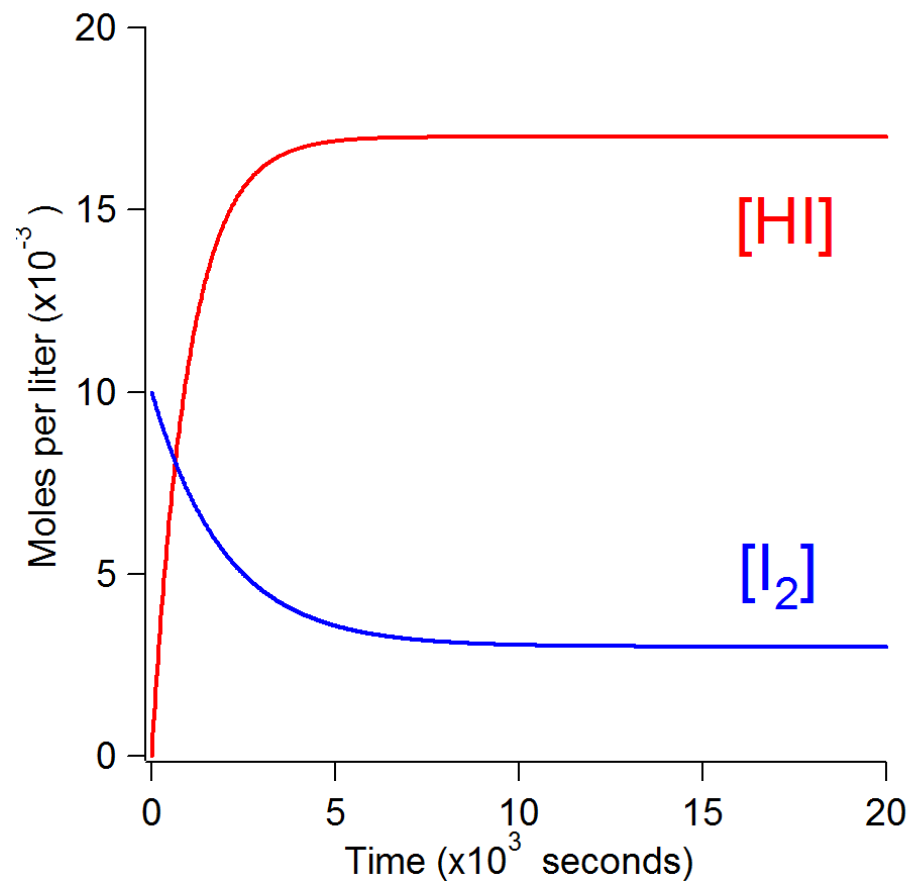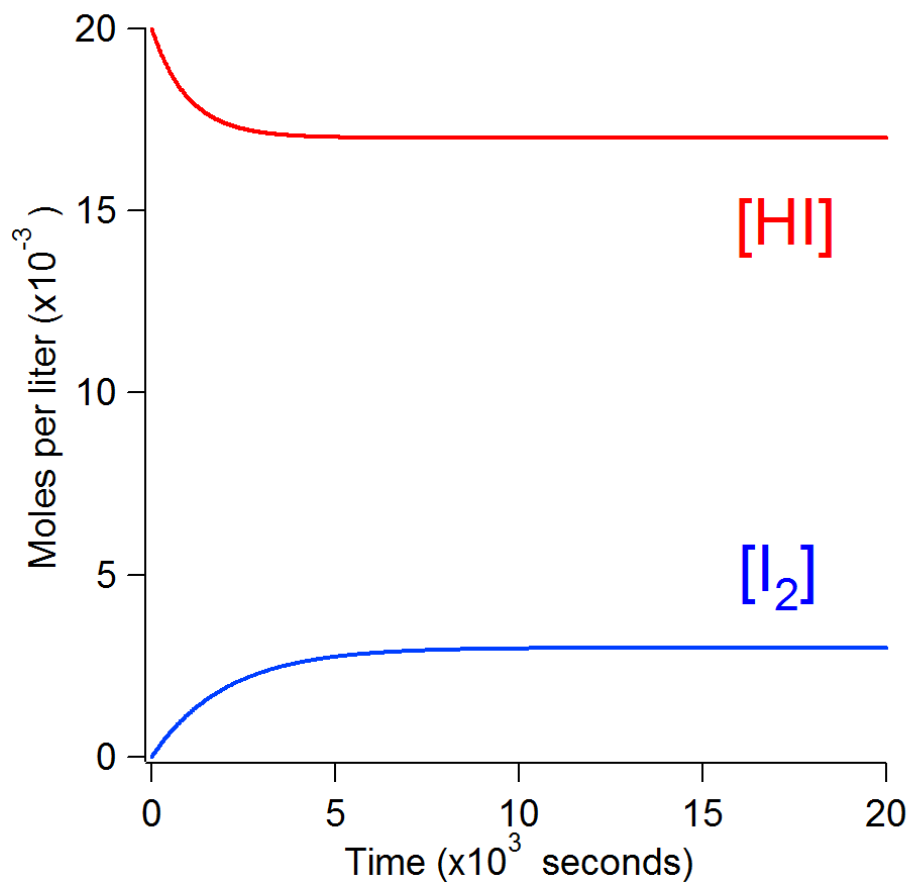
Note that the rate for HI is two times that For I_2.

Approach to equilibrium

If we start with
0.0 M HI and 0.1 M I_2
we see the following
kinetics.

Note that the rate for
HI is two times that
For I_2.

Approach to equilibrium

Approach to equilibrium

• The equilibrium ratios are the same regardless of t the starting concentrations.

The approach to equilibrium has the same rate constant regardless of the magnitude or direction of the deviation from equilibrium.