What is the concentration of barium ion at equilibrium if solid barium fluoride is mixed with deionized water?

$$BaF_2(s) \rightleftharpoons Ba^{2+}(aq) + 2F^-(aq); K_c = 1.00 \times 10^{-6}$$

A 6.00 L reaction vessel contains 0.488 mol hydrogen gas, 0.206 mol iodine vapor, and 2.250 mol HI at equilibrium at 491 C. . What is the value of Kc at 491 C?

$$H_2(g) + I_2(g) \rightleftharpoons 2HI(g)$$

What is the direction of reaction when a mixture of 0.20 M sulfur dioxide, 0.10 M oxygen gas, and 0.40 M sulfur trioxide approaches equilibrium?

$$2SO_2(g) + O_2(g) \rightleftharpoons 2SO_3(g);\ K_c = 4.17 \times 10^{-2}$$

A 5.0 L vessel initially contains 0.0015 mol of each reactant. Find the equilibrium concentrations of all species in the vessel at equilibrium at 150 C.

$$I_2(g) + Br_2(g) \rightleftharpoons 2\,IBr(g) \; ; \; K_c = 120 \text{ @ } 150^\circ C$$

When carbon dioxide is removed from the equilibrium mixture by passing the gases through water (which preferentially absorbs carbon DIOXIDE), what is the direction of net reaction as a new equilibrium is achieved?

$$FeO(s) + CO(g) \rightleftharpoons Fe(s) + CO_2(g)$$

Predict the optimal conditions (temperature and pressure) for maximum conversion of ethylene to ethane.

$C_2H_4(g) + H_2(g) \rightleftharpoons C_2H_6(g)$; $\Delta H^\circ < 0$

ethylene ethane