Equilibrium Calculations

Work with your group to solve the following problems. Use the equilibrium expression for each reaction and show all of your work on a separate piece of paper. You may be asked to put your solution on the board.

1. At a certain temperature, the equilibrium concentrations were found to be: [HCl] = 0.50 M, [F2] = 0.40 M, [Cl2] = 2.0 M, and [HF] = 0.60 M. From this data, calculate Keq.

2 HCl (g) + F2 (g) Cl2 (g) + 2 HF (g)

1. At a certain temperature, [H2] = 2.5 x 10-2 M and [I2] = 3.1 x 10-2 M. If Keq = 8.6 x 10-2, calculate the equilibrium [HI].

2 HI (g) H2 (g) + I2 (g)

1. The following reaction takes place in a 5.00 L container. At equilibrium, it is found that we have 17.0 g NH3; 32.0 g O2; 18.0 g H2O; and 26.0 g NO. Calculate Keq.

4 NH3 (g) + 5 O2 (g) 6 H2O (l) + 4 NO (g)

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