Calculate K from EQ concentrations

1. Ammonium iodide dissociates reversibly to ammonia and hydrogen iodide if heated to 400 °C. NH4I (s) 🡨🡪 NH3 (g) + HI(g). Some ammonium iodide is placed in a flask and heated to 400°C. If the total pressure in the flask when equilibrium is established is 705 mm Hg, what is the value of Kp (when partial pressures are expressed in atmospheres)?
2. PCl5 🡨🡪 PCl3 + Cl2 the gaseous reaction was examined at 250°C. At Equilibrium [PCl5] = 4.2 x 10-5‑ M, [PCl3] = 1.3 x 10-2 M, and [Cl2] = 3.9 x 10-3 M. Calculate Kc for the reaction.
3. A 6.00 L container contains 0.222 mol of PCl3, 0.0189 mol of PCl5 (g) and 0.1044 mol of Cl2 (g) at equilibrium. Calculate Kc for the reaction:

PCl3 (g) + Cl2(g) 🡨🡪 PCl5 (g).

1. A reaction vessel at 491 °C contained 0.0812 M H2, 0.0344 M I2 and 0.357 M HI. Assume the substances are at equilibrium and calculate the value for Kc at 491 °C given the reaction: H2 (g) + I2 (g) 🡨🡪 2 HI (g).







1. The following equilibrium pressures at a certain temperature were observed for the reaction 2NO2 (g) <----> 2 NO (g) + O2 (g). PNO2 = 0.55 atm, Pno = 6.5 x 10-5 atm PO2 = 4.5 x 10-5 atm. Calculate the value of K­p at this temperature.
2. The following equilibrium pressures were observed at a certain temperature for the reaction N2 (g) + 3H2 (g) <----> 2 NH3 (g). PNH3 = 0.031 atm, PN2 = 0.85 atm, PH2 = 0.0031 atm. Calculate Kp for this reaction at this temperature.
3. At 25°C Kc = 3.7 x 10-9 for the reaction CO (g) + Cl2 (g) <----> COCl2 (g). Calculate Kp for this reaction.