NAME: **HONORS CHEMISTRY**

SECTION: The Equilibrium Constant

For each problem, write the expression for the equilibrium constant. Then, calculate the value of the equilibrium constant for the conditions under which the reaction took place.

1. H2(g) + Br2(g) ⇌ 2 HBr(g) [H2] = [Br2] = [HBr] = 2.3 x 10-3 M
2. 2 SO2(g) + O2(g) ⇌ 2 SO3(g) [SO2] = 2.31 x 10-2 M [O2] = 4.05 x 10-2 M

[SO3]= 3.5 x 10-2 M

1. AgCl(s) ⇌ Ag+(aq) +Cl-(aq) [Ag+] = [Cl-] = 1.5 x 10-6 M
2. 2 NaClO3(s) ⇌ 2 NaCl(s) + 3 O2(g) [O2] = 0.0800 M
3. For the reaction in problem number one, at a certain temperature the equilibrium constant has a value of 32. During one experiment at this temperature, the equilibrium concentration of hydrogen and bromine were measured to be 4.3 x 10-3 M and 1.3 x 10-3 M, respectively. What was the concentration of hydrogen bromide at equilibrium?