For the reaction:

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

the equilibrium constant, Keq, is 55

If the initial concentration of the hydrogen and iodine before reacting were both $0.1 \, \text{mol/L}$ and no HI was present, what is the hydrogen iodide concentration in mol/L at equilibrium?

For the reaction:

$$A(g) + B(g) \leftrightarrow C(g) + D(g)$$

the equilibrium concentration of a A, B, C and D in mol/L are respectively 0.11 - x, 0.11 - x, and x and x. The equilibrium constant for the reaction is 100. What is the concentration for C in mol/L at equilibrium?