Chemical equilibrium 2

1. Carbonyl fluoride, COF 2 \rm COF_2, is an important intermediate used in the production of fluorine-containing compounds. For instance, it is used to make the refrigerant carbon tetrafluoride, CF 4 \rm CF_4via the reaction

2COF 2 (g)⇌CO 2 (g)+CF 4 (g), K c =5.60 \rm 2 COF_2(g) \rightleftharpoons CO_2(g) + CF_4(g),~~~~{\it K}_c=5.60
    

If only COF 2 \rm COF_2is present initially at a concentration of 2.00 M M, what concentration of COF 2 \rm COF_2remains at equilibrium?

1. Consider the reaction

CO(g)+NH 3 (g)⇌HCONH 2 (g), K c =0.730 \rm CO(g) + NH_3(g) \rightleftharpoons HCONH_2(g),~~~~{\it K}_c=0.730
    

If a reaction vessel initially contains only CO \rm COand NH 3 \rm NH_3at concentrations of 1.00 M Mand 2.00 M M, respectively, what will the concentration of HCONH 2 \rm HCONH_2be at equilibrium?

Express your answer with the appropriate units

K_{\rm c}=\frac{\rm [C][D]}{\rm [A][B]}=5.0
   

1. The following reaction was carried out in a 2.50L Lreaction vessel at 1100 K \rm K:

C(s)+H 2 O(g)⇌CO(g)+H 2 (g) \rm C (s) + H_2O (g) \rightleftharpoons CO (g) + H_2 (g)

If during the course of the reaction, the vessel is found to contain 5.25mol molof C \rm C, 13.8mol molof H 2 O \rm H_2O, 3.20mol molof CO \rm CO, and 8.60mol molof H 2 \rm H_2, what is the reaction quotient Q Q?

Enter the reaction quotient numerically.