125 Chapter 15 Homework
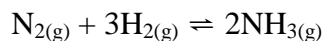
1. An equilibrium mixture, at 900 °C in a 1725 mL container, involving the chemical system

$$CH_{4(g)} + 2H_2S_{(g)} \rightleftharpoons CS_{2(g)} + 4H_{2(g)}$$
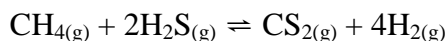
is found to contain 17.6 g CH_4, 50.8 g H_2S, 83.8 g CS_2, and 8.10 g H_2. Calculate the equilibrium constant for this reaction at the given temperature.

2. An equilibrium mixture, at 472 °C in a 1325 mL container, involving the chemical system

$$N_{2(g)} + 3H_{2(g)} \rightleftharpoons 2NH_{3(g)}$$

is found to contain 4.23 g N_2, 0.915 g H_2, and 0.496 g NH_3. Calculate the equilibrium constant for this reaction at the given temperature.

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