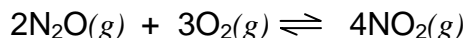
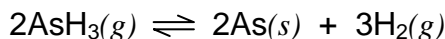


Quiz 2. Take Home. Due Feb 23.
No quizzes accepted after 5:00 p.m. on Feb 23.
Attach work and circle your answers!

1. A mixture of 1.79 g O₂ and 0.840 g N₂O is placed in a 5.00 L container at 50 °C. After equilibrium is established, there is 0.989 g of NO₂. (a) What are the equilibrium concentrations of O₂, N₂O and NO₂? (b) Calculate K_c for this reaction. (c) Calculate K_p at 50 °C. (8 pts)

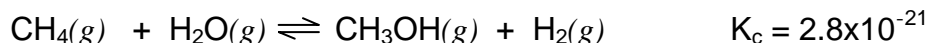
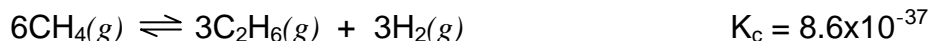


2. The gas arsine, AsH₃, decomposes by the following reaction:



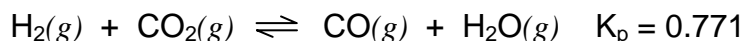
In an experiment at a certain temperature, AsH₃ gas is placed in a flask at a pressure of 0.465 atm. After equilibrium has been established, the total pressure of the gases (for AsH₃ and H₂ taken together) is 0.579 atm. (a) What is the partial pressure of each gas at equilibrium? (b) Calculate the value of K_p for this reaction. (5 pts)

3. Given the equations



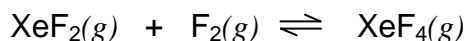
Calculate the value of K_c for: $2\text{CH}_3\text{OH}(g) + \text{H}_2(g) \rightleftharpoons \text{C}_2\text{H}_6(g) + 2\text{H}_2\text{O}(g)$
Make sure to show your work! (4 pt)

4. A mixture of 0.500 atm H₂ and 0.500 atm CO₂ is placed in a container and undergoes the following reaction:



Calculate the equilibrium partial pressures of each of the four gases. (5 pts)

5. The value of K_c for the following reaction is 3.17 at 300 K.



Suppose 0.525 moles of XeF₂ and 1.12 moles of F₂ are placed in a 2.50 L vessel. What are the equilibrium concentrations of XeF₂, F₂, and XeF₄? (8 pts)