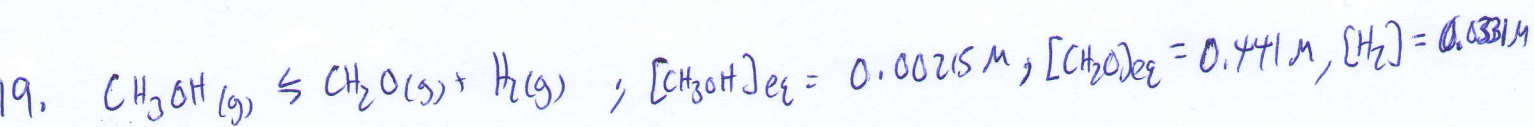
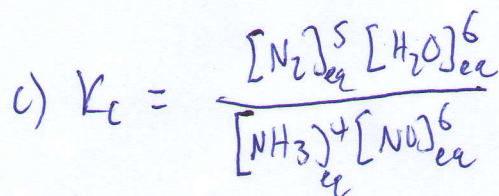
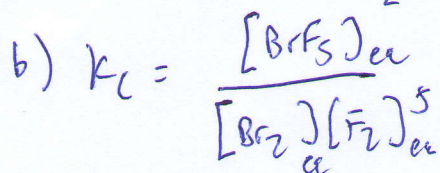
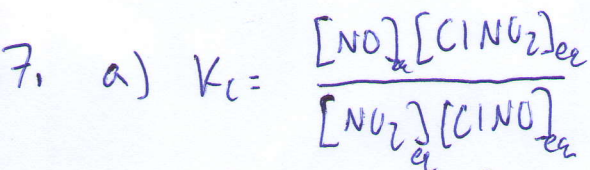
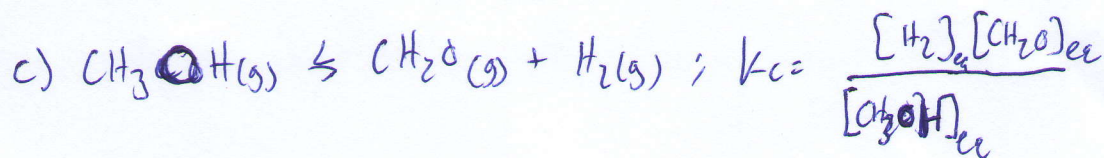
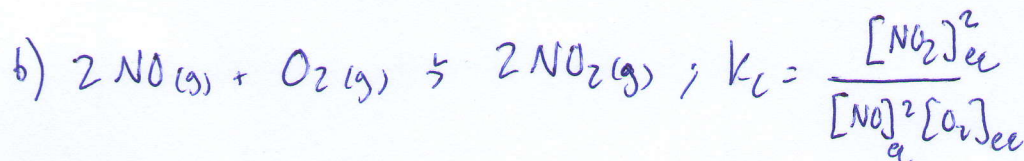
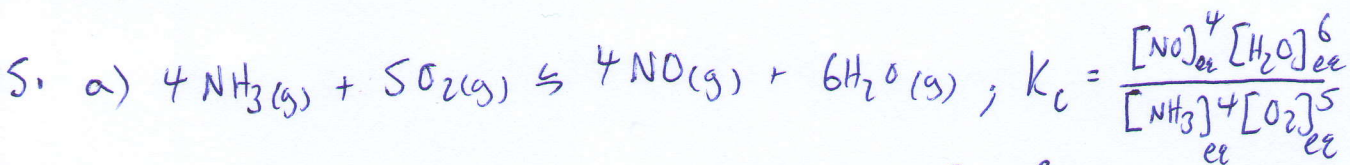


Equilibrium II Ch. 17 # 13-27 (odd)

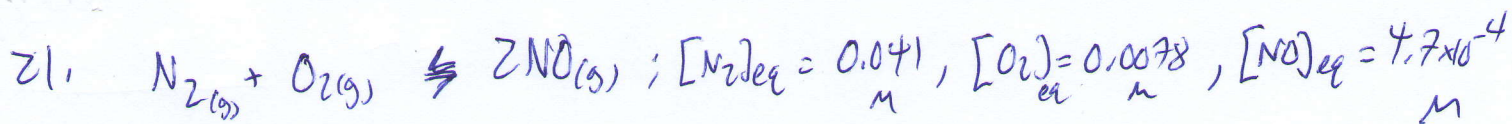
13. The equilibrium constant for a reaction represents the relative amounts of products and reactants in a system at chemical equilibrium. The algebraic form of the equilibrium constant for a typical rxn $aA + bB \rightleftharpoons cC + dD$ is

$$K_{eq} = \frac{[C]_{eq}^c [D]_{eq}^d}{[A]_{eq}^a [B]_{eq}^b}$$

where the square brackets indicate the concentration of the bracketed compound.



$$K_c = \frac{[CH_2O]_{eq} [H_2]_{eq}}{[CH_3OH]_{eq}} = \frac{(0.441)(0.0331)}{(0.00215)} = 6.789$$



$$K_c = \frac{[NO]_{eq}^2}{[N_2]_{eq}[O_2]_{eq}} = \frac{(4.7 \times 10^{-4})^2}{(0.041)(0.0078)} = 6.907 \times 10^{-4}$$

23. In a homogeneous equilibrium system, all reactants and products are in the same phase. For example, $N_2(g) + O_2(g) \rightleftharpoons 2NO(g)$.

In a heterogeneous equilibrium system, not all reactants and products are in the same phase. Two examples are:

