

Ch. 16.9–16.10: pH and Solubility and Complex Ion Equilibria
Homework 16–6: Problems pg. 724 #64, 65, 67, 68, 72, 74, 76

65 In water: $s = 1.4 \times 10^{-4} M$

In a buffer at pH = 9.0: $s = 0.12 M$

67 $[\text{OH}^-] = 0.35 M$

68 $Q = 2.0 \times 10^{-11}$, therefore, a precipitate of $\text{Fe}(\text{OH})_2$ will form.

72 $[\text{Cd}^{2+}] = 1.1 \times 10^{-18} M$

$$[\text{CN}^-] = 0.48 M$$

$$[\text{Cd}(\text{CN})_4^{2-}] = 4.2 \times 10^{-3} M$$

74 Overall: $\text{AgI}(s) + 2\text{NH}_3(aq) \rightleftharpoons \text{Ag}(\text{NH}_3)_2^+(aq) + \text{I}^-(aq)$ $K = K_{\text{sp}} \times K_{\text{f}} = 1.2 \times 10^{-9}$

$$s = 3.5 \times 10^{-5} M$$