

2. a) Write the reaction that represents the solubility of $\text{Co}(\text{OH})_2$ in water. Make sure you include the physical states.

--

4

b) If the molar solubility of $\text{Co}(\text{OH})_2$ is 5.4×10^{-6} M in pure water, calculate K_{sp} .

--

6

c) What is the molar solubility of $\text{Co}(\text{OH})_2$ in a buffered solution that has a pH of 10.43? Use the K_{sp} you calculated in part (b).

--

8

d) Account for the differences in molar solubilities in parts (b) and (c).

--

4

3. Will the pH of a solution from weak base-strong acid titration be acidic, neutral, or basic at the equivalence point? *You must justify your answer.*

--

4