



$$K_{sp} = [\text{Fe}^{3+}][\text{OH}^-]^3$$

$$K_{sp} = x \cdot (3x)^3 = 27x^4 \quad x = [\text{Fe}^{3+}]$$

$$x = 1.29 \times 10^{-3} \text{ M} = [\text{Fe}^{3+}]$$

$$[\text{OH}^-] = 3[\text{Fe}^{3+}] + [\text{Fe(OH)}_2^+] + 2[\text{Fe(OH)}^{2+}] + [\text{H}^+]$$

$$0 = 3[\text{Fe}^{3+}] + [\text{Fe(OH)}_2^+] + 2[\text{Fe(OH)}^{2+}] + [\text{H}^+] - [\text{OH}^-]$$

$$\text{tot Fe} = [\text{Fe}^{3+}] + [\text{Fe(OH)}_2^+] + [\text{Fe(OH)}^{2+}]$$