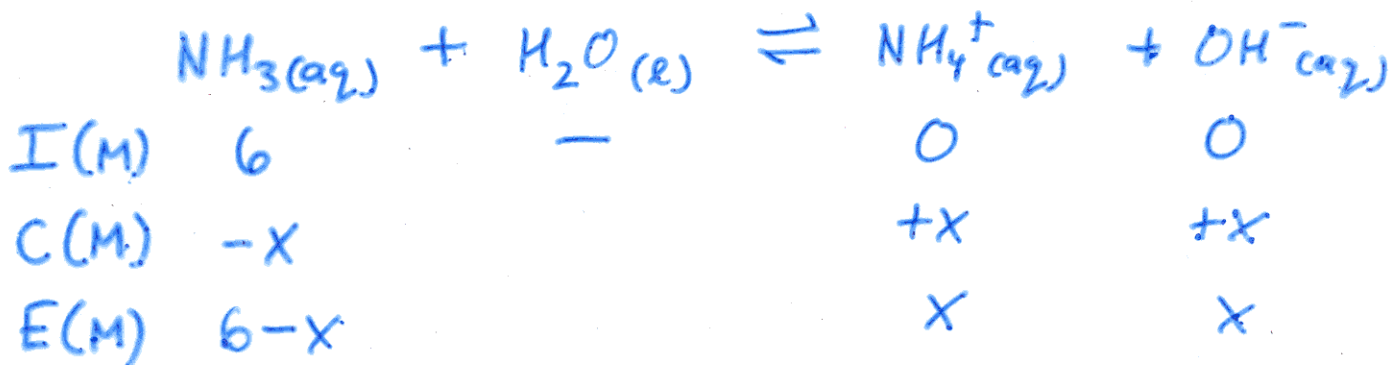


Find the ^{equilibrium} concentration of $[\text{OH}^-]$ in a 6 M aqueous solution of NH_3



$$K_b = \frac{[\text{NH}_4^+][\text{OH}^-]}{[\text{NH}_3]} = \frac{x^2}{6-x} = 1.8 \times 10^{-5} \text{ (at } 25^\circ\text{C)}$$



$\sim 10^5$ difference

$\Rightarrow x \ll 6$

so $x = \sqrt{6(1.8 \times 10^{-5})} = \boxed{0.01 \text{ M} = [\text{OH}^-]_{\text{eq}}}$

$$\begin{aligned} \% \text{ Dissociation} &= \frac{x}{[\text{NH}_3]_0} \times 100\% = \frac{0.01 \text{ M}}{6 \text{ M}} * 100\% \\ &= \boxed{0.2\%} \end{aligned}$$