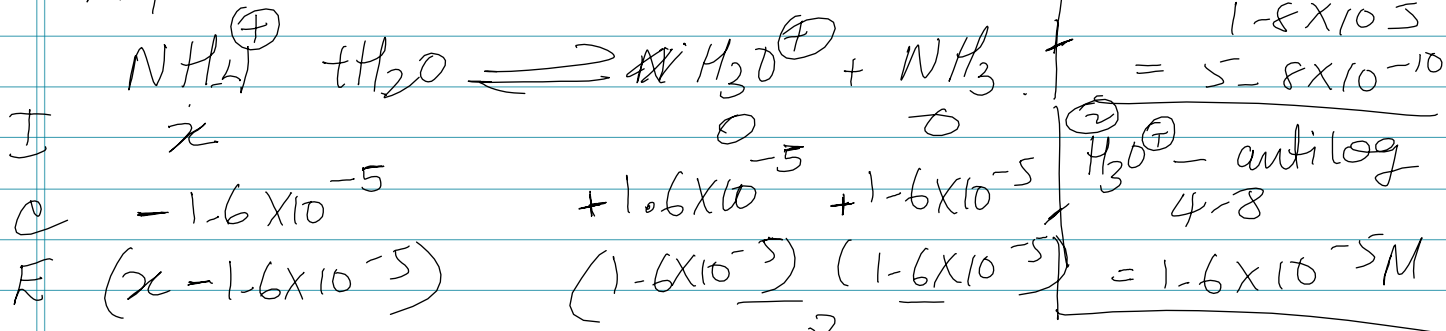


## Acid-Base Eq. (8) Conc. of ions from pH of salts.

① What is the molarity of  $\text{NH}_4\text{NO}_3$  soln with pH 4.80.

( $K_b \text{NH}_3 = 1.8 \times 10^{-5}$ )

$\text{NH}_4^+$  is acid salt - need  $K_a$ .

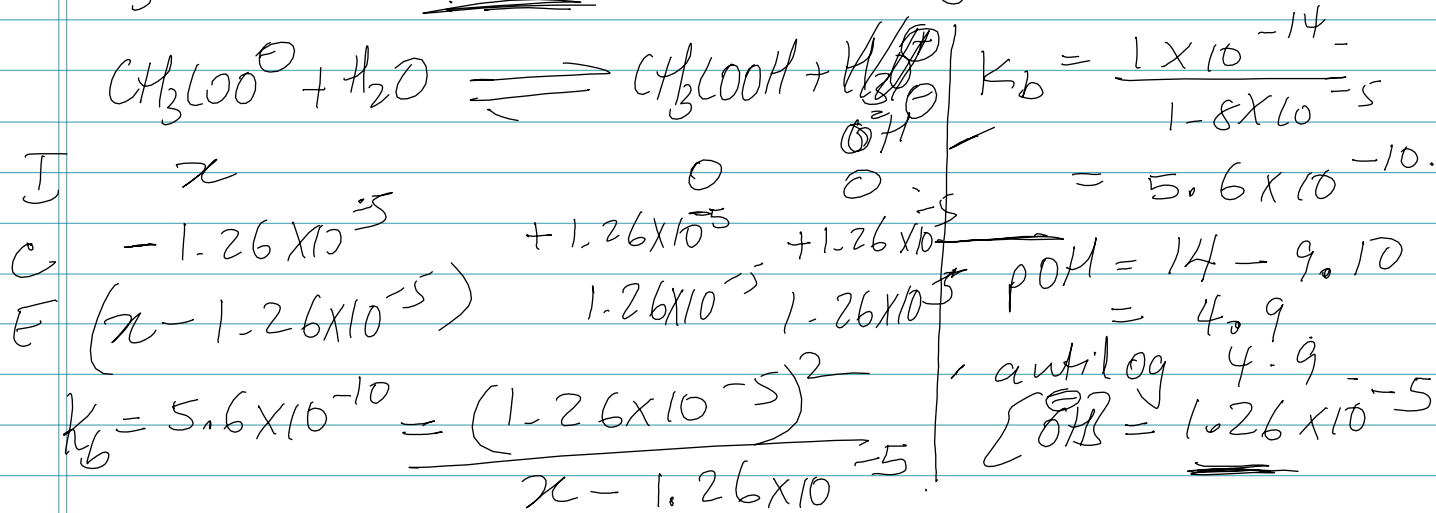


$$K_a = 5.8 \times 10^{-10} = \frac{(1.6 \times 10^{-5})^2}{(x - 1.6 \times 10^{-5})}$$

$$x = 0.46 \text{ M}$$

② What is the molarity of a  $\text{CH}_3\text{COONa}$  solution of pH = 9.10. ( $K_a$  acetic acid =  $1.8 \times 10^{-5}$ )

$\text{CH}_3\text{COO}^-$  is weak base so need  $K_b$ , need  $\text{OH}^-$



$$K_b = 5.6 \times 10^{-10} = \frac{(1.26 \times 10^{-5})^2}{x - 1.26 \times 10^{-5}}$$

$$x = 0.29 \text{ M}$$