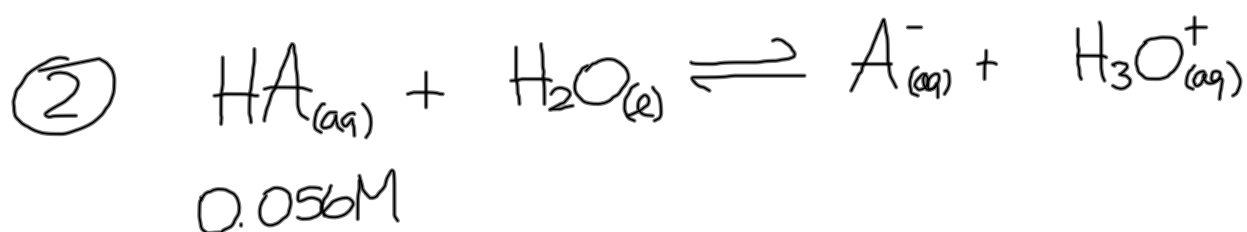


# Worksheet



$$K_a = \frac{[\text{A}^{-}_{(\text{aq})}][\text{H}_3\text{O}^{+}_{(\text{aq})}]}{[\text{HA}_{(\text{aq})}]}, \quad [\text{A}^{-}_{(\text{aq})}] = [\text{H}_3\text{O}^{+}_{(\text{aq})}]$$

$$K_a = \frac{[\text{H}_3\text{O}^{+}_{(\text{aq})}]^2}{[\text{HA}_{(\text{aq})}]}$$

$$[\text{H}_3\text{O}^{+}_{(\text{aq})}] = \sqrt{(1.4 \times 10^{-5})(0.056)}$$

$$[\text{H}_3\text{O}^{+}_{(\text{aq})}] = 8.9 \times 10^{-4} \text{M}$$

$$\text{pH} = -\log[\text{H}_3\text{O}^{+}_{(\text{aq})}]$$

$$\text{pH} = -\log[8.9 \times 10^{-4}]$$

$$\boxed{\text{pH} = 3.05}$$





0.600 M

$$K_b = \frac{[\text{CH}_3\text{NH}_3^+(\text{aq})][\text{OH}^-(\text{aq})]}{[\text{CH}_3\text{NH}_2(\text{aq})]}, \quad [\text{CH}_3\text{NH}_3^+(\text{aq})] = [\text{OH}^-(\text{aq})]$$

$$K_b = \frac{[\text{OH}^-(\text{aq})]^2}{[\text{CH}_3\text{NH}_2(\text{aq})]}$$

$$[\text{OH}^-(\text{aq})] = \sqrt{(4.4 \times 10^{-4})[0.600]}$$

$$[\text{OH}^-(\text{aq})] = 0.0162 \text{ M}$$

$$\text{pOH} = -\log [\text{OH}^-(\text{aq})]$$

$$\text{pOH} = -\log [0.0162]$$

$$\text{pOH} = 1.790$$

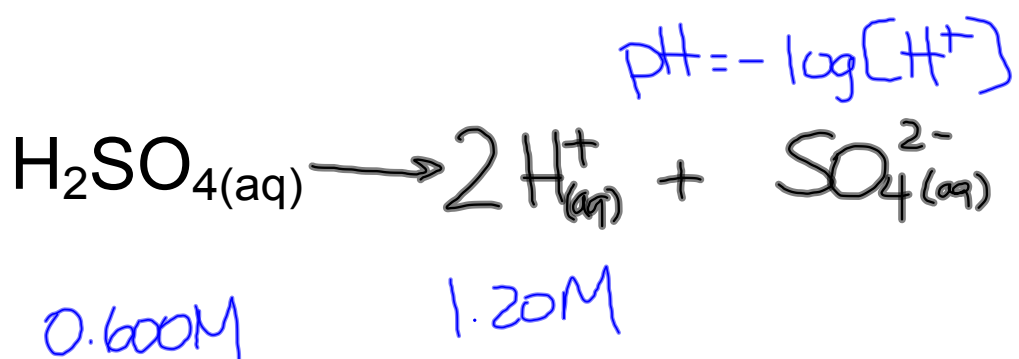
$$\text{pH} + \text{pOH} = 14.000$$

$$\text{pH} = 14.000 - 1.790$$

$$\boxed{\text{pH} = 12.210}$$

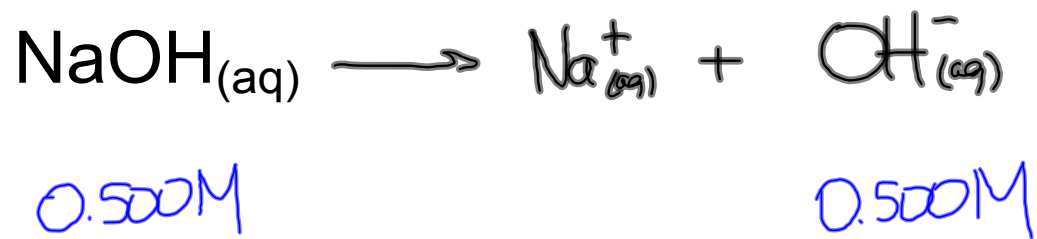


## Strong Acids





# Strong Bases





# Worksheet