

Equivalence Point

CH_3COOH

NaOH

1.00 M

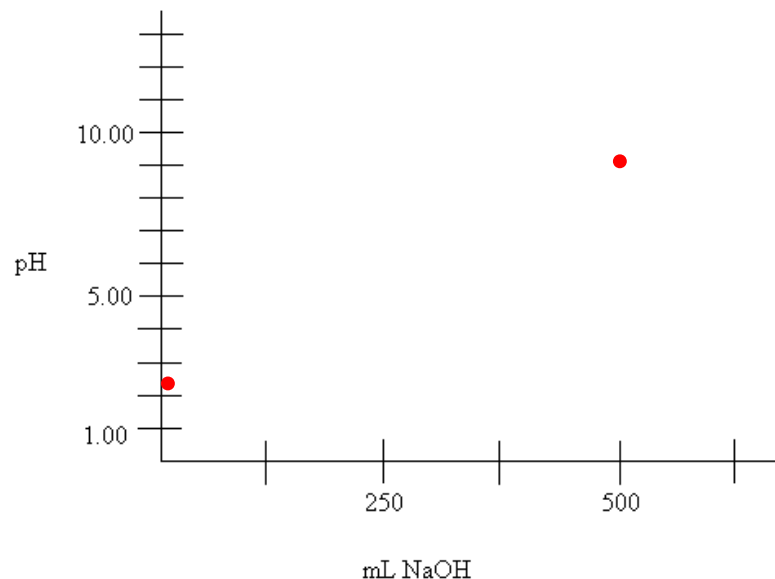
1.00 M



$$K_b = \frac{K_w}{K_a} = \frac{1 \times 10^{-14}}{1.8 \times 10^{-5}} = 5.56 \times 10^{-10}$$

$$x = [\text{OH}^-] = 1.67 \times 10^{-5}$$

$$\text{pH} = 9.22$$



$$5.56 \times 10^{-10} = \frac{[\text{CH}_3\text{COOH}][\text{OH}^-]}{[\text{CH}_3\text{COO}^-]} = \frac{x^2}{0.500 - x}$$