

Name _____

Acids and Bases

- 1) What is the pOH of a solution if its pH is found to be 2.65?
- 2) What is the concentration of OH⁻ ions in a limewater solution if the hydronium ion concentration is $3.98 \times 10^{-13} \text{M}$? Is it acidic or basic?
- 3) If the [OH⁻] is $1.20 \times 10^{-8} \text{M}$, then what is the [H₃O⁺]?
- 4) If the [H₃O⁺] is $5.45 \times 10^{-10} \text{M}$, then what is the pH?
- 5) If the [OH⁻] is $3.34 \times 10^{-5} \text{M}$, then what is the pH?
- 6) If the pH is 9.81, then what is the [H₃O⁺]?
- 7) If the pH is 2.12, then what is the [OH⁻]?
- 8) A volume of 52.1mL of 0.520M NaOH neutralizes a 75.0mL solution of HCl. What is the concentration of the HCl solution?
- 9) A volume of 16.1mL of NaOH is titrated and neutralized with 48.3mL of 0.010M HCl. What was the original pH of the NaOH solution?
- 10) A volume of 45.2mL of 0.250M HCl neutralizes a 55.0mL sample of Ca(OH)₂ solution. What was the concentration of the calcium hydroxide solution. (remember that each F.U. of Ca(OH)₂ has two hydroxides!)
- 11) A volume of 15.3mL of 0.250M aluminum hydroxide neutralizes a 60.0mL sample of a sulfuric acid solution. What is the concentration of the sulfuric acid solution? What pH would that be?
- 12) 50.0mL of a hydrochloric acid solution with a pH of 1.80 is reacted with excess magnesium. What pressure would be exerted by the hydrogen gas if it was collected in a 0.025L flask at 298K?
- 13) 35.0mL of a 0.325M calcium hydroxide solution is used to neutralize 50.0mL of a phosphoric acid solution. What was the initial concentration of the acid solution? What was its pOH?
- 14) The pH of a sodium hydroxide solution is 11.94. If 25.0mL of that solution neutralizes 43.2mL of a sulfuric acid solution, what was the initial hydrogen ion concentration?