Name _____

Acids and Bases

1) What is the pOH of a solution if its pH is found to be 2.65?

11.35

2) What is the concentration of OH^- ions in a limewater solution if the hydronium ion concentration is $3.98x10^{-13}M$? Is it acidic or basic?

$2.51x10^{-2}M$, basic

3) It the $[OH^-]$ is $1.20x10^{-8}M$, then what is the $[H_3O^+]$?

$8.33x10^{-7}M$

4) If the $[H_3O^+]$ is $5.45x10^{-10}M$, then what is the pH?

9.26

5) If the $[OH^-]$ is $3.34x10^{-5}M$, then what is the pH?

9.52

6) If the pH is 9.81, then what is the $[H_3O^+]$?

$1.54x10^{-10}M$

7) If the pH is 2.12, then what is the $[OH^-]$?

$1.32x10^{-12}M$

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?

0.361M

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?

12.48

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!)

0.103M

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?

0.0956M, 0.720

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?

0.388atm

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?

0.152M, 13.66

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?

$5.04x10^{-3}M$