## pH and pOH Worksheet

Name		
	Date	Period

1. Give the pH of solutions with the following hydronium ion (H<sub>3</sub>O<sup>+</sup>) concentrations

A. 1x10<sup>-1</sup> \_\_\_\_\_ B. 1x10<sup>-5</sup> \_\_\_\_ C. 1x10<sup>-13</sup> \_\_\_\_\_

D. 2x10<sup>-3</sup> \_\_\_\_\_ F. 5 x 10<sup>-11</sup> \_\_\_\_

2. For the following pH solutions, what is the  $H_3O^+$  ion concentration?

A. 7 \_\_\_\_\_ B. 3 \_\_\_\_ C. 9 \_\_\_\_

D. 3.5 \_\_\_\_\_ E. 7.8 \_\_\_\_

3. Give the pOH for the solutions with the following hydroxide ion (OH<sup>-</sup>) concentrations.

A. 1 x 10<sup>-10</sup> B. 1 x 10<sup>-2</sup>

C. 3.6 x 10<sup>-4</sup>

4. For the following pOH solutions, what is the OH- ion concentration?

A. 8 \_\_\_\_\_ B. 14 \_\_\_\_ C. 3 \_\_\_\_

D. 9.7 E. 4.3

5. Use the given information to fill in the missing information.

H<sub>3</sub>O<sup>+</sup> Concentration

pН

OH<sup>-</sup> Concentration

pOH

1 x 10-6

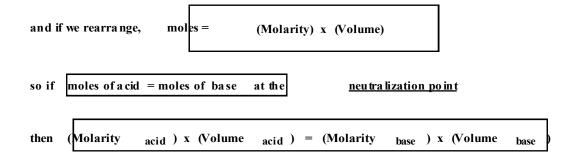
9.0

2.0

9. At the neutralization point, the number of moles of acid and the number of moles of base are

In the Molarity Equation,

moles Molarity = Liters



- 6. How much 2.0 M HCl will it take to neutralize 500 mL of 1.0 M NaOH?
- 7. How much 2.0 M H<sub>2</sub>SO<sub>4</sub> will it take to neutralize 150 mL of 1.0 NaOH?
- 8. 35.7 mL of 0.1 NaOH is necessary to neutralize a 50.0 mL sample of acetic acid ( $HC_2H_3O_2$ ). What is the concentration of acetic acid?

10. Exactly one mole of sulfuric acid is poured into a large tub of water and stirred around. How much 0.5 M NaOH will have to be added in order to turn phenolphthalein indicator to a pink color (this will happen at pH 7)?