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| chem15Anatomy & Physiology 12**Acid and Base Worksheet**  | Name:Block:Date: |

1. Define an acid.
2. Define a base.
3. Acids are molecules that dissociate in water, releasing \_\_\_\_\_\_\_\_\_\_ ions, \_\_\_\_\_\_\_\_\_\_ are molecules that either take up hydrogen ions or release hydroxide ions.
4. pH is defined as the negative logarithm of the \_\_\_\_\_\_\_\_\_\_ ion concentration. As we move down the pH scale, each unit \_\_\_\_\_\_\_\_\_\_ times the acidity of the previous unit. A pH of \_\_\_\_\_\_\_\_\_\_ has an equal concentration of hydrogen ions and hydroxide ions.
5. The pH scale ranges from 0 to \_\_\_\_\_\_\_\_\_\_. \_\_\_\_\_\_\_\_\_\_ are chemicals or combinations of chemicals that take up excess hydrogen ions or hydroxide ions and help keep the pH within normal limits.
6. Label the following diagram of the pH curve with these terms: basic, acidic, neutral, hydrogen ion concentration, and hydroxide ion concentration.



1. Complete the following table to help understand the relationship between the hydrogen ion concentration and pH.

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| **[H+]** | **pH** | **Acid/Base/Neutral** |
| Example: 1 x 10-6 | *6* | *Acid* |
| 1 x 10-5 |  |  |
| 1 x 10-10 |  |  |
| 1 x 10-7 |  |  |

1. As the pH of a solution changes from 8.6 to 9.6, it becomes more \_\_\_\_\_\_\_\_\_\_ *(acidic/basic)*. At a pH of 7, the number of hydrogen ions \_\_\_\_\_\_\_\_\_\_ the number of hydroxide ions. A pH of 6 has \_\_\_\_\_\_\_\_\_\_ times as much hydrogen ions as a pH of 8. The pH curve starts at \_\_\_\_\_\_\_\_\_\_ and goes to \_\_\_\_\_\_\_\_\_\_. As the pH of a solution increases, the number of hydrogen ions \_\_\_\_\_\_\_\_\_\_ *(increases/decreases).* As the pH of a solution increases, the number of hydroxide ions \_\_\_\_\_\_\_\_\_\_ *(increases/decreases)*. \_\_\_\_\_\_\_\_\_\_ help to prevent any change in the blood pH.