NAME: **HONORS CHEMISTRY**

SECTION: Introducing the pH Scale

Go to <http://www.compoundchem.com/2015/07/09/ph-scale/> and use this information to answer the following questions. Note: the colors in the infographic show the color changes for universal indicator at different pH values.

1. What pH range corresponds to basic (or alkaline) solutions?
2. List three everyday examples of basic substances
3. What pH range corresponds to acidic solutions?
4. List three everyday examples of acidic substances
5. Complete the following statements:
* For acidic solutions, [H+] is greater/less than/equal to [OH-]
* For basic solutions, [H+] is greater/less than/equal to [OH-]
* For neutral solutions, [H+] is greater/less than/equal to [OH-]
* As [H+] increases, the [OH-] \_\_\_\_\_\_\_\_
1. Can pH be greater than 14 or less than 0?
2. State the mathematical definition of pH.
3. What pH is neutral for water? According to the article, what conditions are necessary for this to be an accurate statement?
4. Complete the following table. (Hint: what is the relationship between the exponent and the pH?)

|  |  |  |
| --- | --- | --- |
| **[H3O+]** | **pH** | **Acidic, basic or neutral?** |
| 1 x 10-2 M | 2 | acidic |
|  | 6 |  |
| 1 x 10-7 M |  |  |
|  | 10 |  |
| 1 x 10-13 M |  |  |