**Calculating pH and pOH**

* The \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ scale is used to find the amount of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ions in a solution.
  + Substances with a hydrogen ions in solution are acids.
* The \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ scale is used to find the amount of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ions in a solution.
  + Substances with hydroxide ions in solution are bases.

**Formulas**

pH=\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ pOH=\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**How to enter a problem in your calculator EXAMPLE PROBLEM**

What is the pH of a solution if the [H3O+] is 3.4 x 10-5?

* On our TI-30X Calculators, the keystrokes are as follows:
  + **pH = (-) log 3 . 4 2nd EE (-) 5 enter = 4.5**

Examples: Calculate the pH or pOH of the following solutions:

1. [H+]= 1 x10-14 M
2. [H+]= 1 x10-8 M
3. [H+]= 1 x10-3 M
4. [OH-]= 1 x10-11 M
5. [OH-]= 1 x10-7 M
6. [OH-]= 1 x10-11 M

* You can also find the pH or pOH if given one or the other.

**Formula: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

Given the pH values determine the pOH.

1. pH= 3.0
2. pH= 7.00
3. pH= 11.0
4. pH= 5.0

Given the pOH determine the pH.

1. pOH=7.0
2. pOH= 11.00
3. pOH= 4.00
4. pOH= 6.00