Name_____

Honors Chemistry

pH calculations

To do these calculations, use the equation **pH = - log [H_3O^+]**, to reverse it **10^{-pH} = [H_3O^+]**. In any solution hydronium concentration in moles/liter (M) multiplied by the hydroxide concentration (M) will equal $1x10^{-14}$. **[H_3O^+][OH^-] = $1x10^{-14}$**
pH + pOH = 14.

1. If a solution has a [H_3O^+] of $4.61x10^{-11}$ M, what is the pH of the solution? What is the hydroxide conc.? What is the pOH?

pH=
pOH=
[H_3O^+]=
[OH^-]=

2. If a solution has a pH of 5.42, what is the [H_3O^+] of the solution? What is the hydroxide conc.? What is the pOH?

pH=
pOH=
[H_3O^+]=
[OH^-]=

3. If a solution has a [H_3O^+] of $1.76x10^{-3}$ M, what is the pH of the solution? What is the hydroxide conc.? What is the pOH?

pH=
pOH=
[H_3O^+]=
[OH^-]=

4. If a solution has a pOH of 7.55, what is the [H_3O^+] of the solution? What is the hydroxide conc.? What is the pH?

pH=
pOH=
[H_3O^+]=
[OH^-]=

5. If a solution has a $[OH^-]$ of 4.43×10^{-10} M, what is the hydronium conc.? What is the pH of the solution? What is the pOH?

pH=
pOH=
$[H_3O^+]$=
$[OH^-]$=

6. If a solution has a $[H_3O^+]$ of 2.61×10^{-5} M, what is the pH of the solution? What is the hydroxide conc.? What is the pOH?

pH=
pOH=
$[H_3O^+]$=
$[OH^-]$=

7. If a solution has a pH of 9.80, what is the $[H_3O^+]$ of the solution? What is the hydroxide conc.? What is the pOH?

pH=
pOH=
$[H_3O^+]$=
$[OH^-]$=

8. If a solution has a $[H_3O^+]$ of 2.6×10^{-8} M, what is the pH of the solution? What is the hydroxide conc.? What is the pOH?

pH=
pOH=
$[H_3O^+]$=
$[OH^-]$=

9. If a solution has a pOH of 2.85, what is the $[H_3O^+]$ of the solution? What is the hydroxide conc.? What is the pH?

pH=
pOH=
$[H_3O^+]$=
$[OH^-]$=