$$pH + pOH = 14$$

 $-log[H^+] = pH$
 $10^{-pH} = [H^+]$
 $[H^+][OH^-] = 1.0E-14$

- 1. What is the range of pH.
- Is it possible to have a pH greater or smaller then 14 and 0 respectively?
- Which pH is basic and which is acidic?

In the following questions, calculate the \underline{pH} from the concentrations of $\underline{[H_3O^+]}$. Indicate acidic or basic.

	$[H_3O^+]$	to	pHq
4.	1.0		Ô
5.	0.1		ı
6.	0.01		· 2
7.	0.001		3

- 8. What is the $[H_3O^+]$ at neutral?
 - 10E-7
- What is the [OH-1] at neutral?

In the following calculate the concentration of $\mathbf{H}_3\mathbf{O}^+$ from the \mathbf{pH} .

Calculate the **pOH** from the following concentrations of H₃O⁺.

Calculate the bOH from the following concentrations of H₃O
$$^+$$
 ...to...

H₃O $^+$...to...

pOH
-1.97 Or O

8.39

17. [1.5 E -12 M]

18. [.0001M]

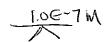
 $\underline{z.17}$

$$#16$$
) -log (2.56-6)
 $14-5.6=8.37$
 $#17-105(1.56-8)$
 $14=11.8=2.17$

Calculate the off from the following concentrations of OH

are the following solution Acidic/basic/neutral?

- 19. [2.99 E –6M] OH- —
- 20. 1.23 E -8M] OH⁻ 21. [9.99 E -11M] H₃O⁺ 22. [.001M] H₃O⁺



23. Student hypothesis: A person's stomach is extremely acidic and therefore there is no hydroxide ions in the stomach.

Falst Both H++OHalways Both (H+)>[OH]