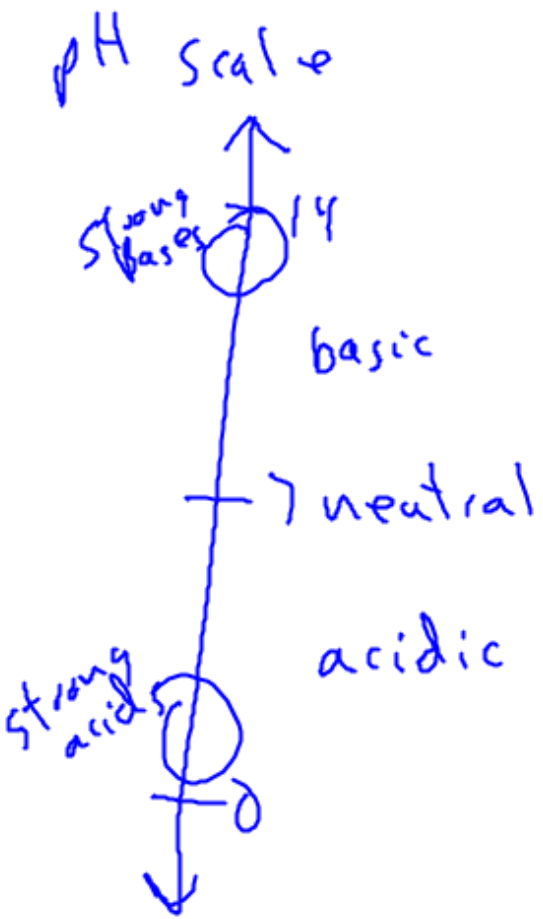
pH

- how acidic a solution is

$pH = -\log [H^+]$

[ ] = stands for concentration (M)



$pOH = -\log [OH^-]$

$pH + pOH = 14$

Special cases

Strong Acids + Bases

$$[HA] = [H^+]$$

why?

$$HA \rightarrow H^+ + A^-$$

1.0M → all is dissociated → 1.0 M + 1.0 M

don't care about this

pH problems

Ex $[H^+] = 1.0 \times 10^{-4}\ M$

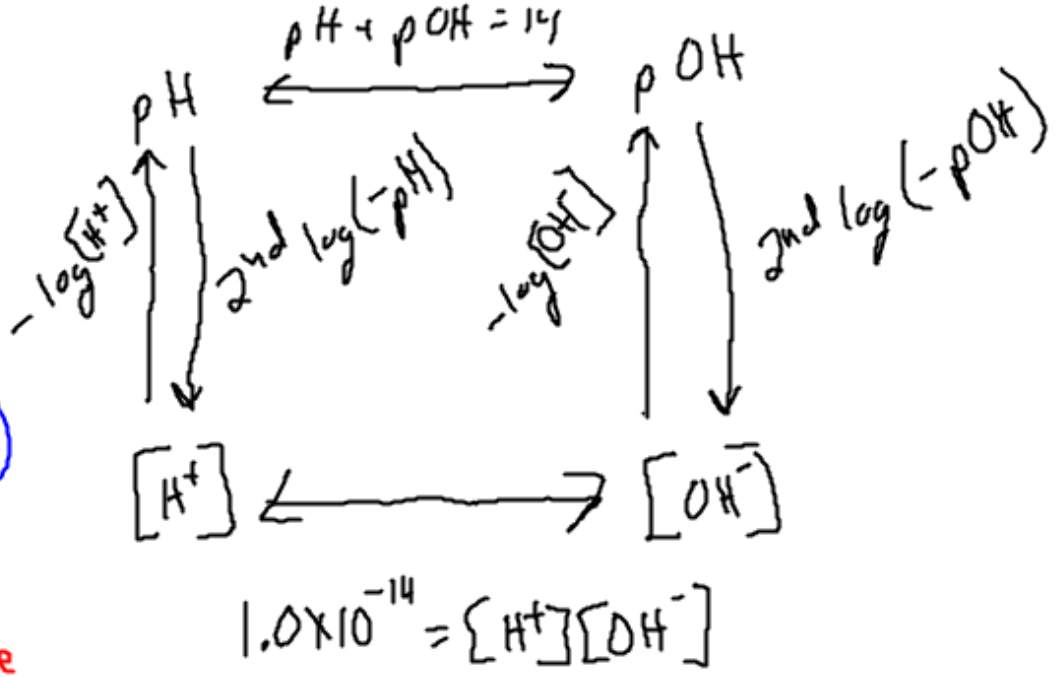
$pH = ?$

$pH = -\log[H^+] = -\log(1.0 \times 10^{-4})$

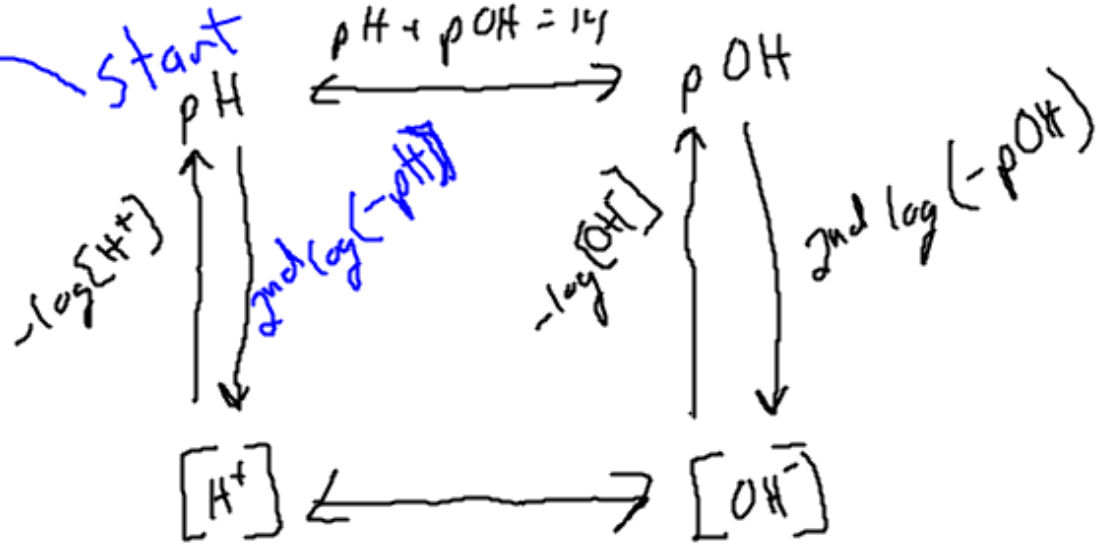
$pH = 4.00$

log term

decimals are the only sig figs



$1.0 \times 10^{-14} = [H^+][OH^-]$



pH = 12.14

find all others

$[H^+]$

$= 2^{nd}\ log(-12.14)$

$7.2 \times 10^{-13}\ M$

need unit since it is [ ]

pOH

$= 14 - pH$

$= 14 - 12.14$

$pOH = 1.86$

$[OH^-]$

$[OH^-] = \frac{1.0 \times 10^{-14}}{7.2 \times 10^{-13}}$

$[OH] = 0.014\ M$

All three could be found another way.