

$pH = -\log [H^+]$ ←
 $pOH = -\log [OH^-]$

$pH + pOH = 14$
 $K_w = [H^+][OH^-] = 1 \times 10^{-14}$
 AT 25°C

$[H^+] = 1 \times 10^{-pH}$ → $\log(H^+)$
 $[OH^-] = 1 \times 10^{-pOH}$

ONLY WORKS FOR $1 \times 10^{\#}$

Apr 22-9:25 AM

$Ca(OH)_2$ 2.3M (SB) I 2.3 Dissolve	\rightarrow	Ca^{+2} + 2.3	$+ 2OH^-$ + 4.6 MOLE RATIO
Δ ~ 2.3 Prod E ~ 0	}	2.3	4.6M (OH⁻) PH 2.3M (Ca(OH)₂)

$K_b = \frac{[Ca^{+2}][OH^-]^2}{[Ca(OH)_2]} = \text{Very large}$

4.6M (OH⁻) Find pH

① $pOH = -\log [OH^-]$
 $= -\log (4.6)$
 $pOH = -0.66$

$pH + pOH = 14$
 $pH + -0.66 = 14$
 $pH = 14.66$

$pH = -\log [H^+]$
 $pH = 14.66$

$[H^+][OH^-] = 1 \times 10^{-14}$
 $[H^+](4.6) = 1 \times 10^{-14}$
 $[H^+] = 2.17 \times 10^{-15}$

Apr 22-9:36 AM

4M HCN $K_a = 4.9 \times 10^{-10}$ Find pH
 (WA)
Very small amount dissociates

R	HCN	\rightarrow	H ⁺	+	CN ⁻	
I	4		0		0	
C	-x		+x		+x	make ratio!
E	4-x		x		x	

$K_a = \frac{[H^+][CN^-]}{[HCN]} = 4.9 \times 10^{-10}$

$\frac{(x)(x)}{4} = 4.9 \times 10^{-10}$

$x^2 = 1.96 \times 10^{-9}$

$x = 4.43 \times 10^{-5} [H^+]$

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

$pH = 4.35$

Use K_a pH, 1/5 (conv!)

Apr 22-9:49 AM

pH SA # 1 + 2
 pH SA 1 → 6

Apr 22-10:03 AM