To "p" $pH = - \log [H_3O^+]$ $pOH = - \log [OH^-]$ $pK_a = - \log K_a$ $pK_b = - \log K_b$ $pK_w = - \log K_w$	No Brain Too Small● CHEMISTRY AS 91392 pH is pHun and other bad puns $pH + pOH = 14$ $pK_a + pK_b = 14$	Calculations: weak acids $K_a = [H_3O^+][A^-] / [HA]$ $K_a = [H_3O^+]^2 / [HA]$
To "un-p" $[H_3O^+] = 10^{-pH}$ $[OH^-] = 10^{-pOH}$ $K_a = 10^{-pKa}$ $K_b = 10^{-pKb}$ $K_w = 10^{-pKw}$	$[H_3O^+][OH^-] = 1 \times 10^{-14}$ $K_w = [H_3O^+][OH^-] = 1 \times 10^{-14}$ @ 25°C $K_a \times K_b = 1 \times 10^{-14}$ $K_a \times K_b = K_w$	Calculations: weak bases $K_b = [OH^-]^2 / [B]$ Note: You are not normally given K_b; Instead you will get given K_a or pK_a of the conjugate acid. Calculate the K_b value from this!!
Kw is the ionic product for water $2H_2O \rightleftharpoons H_3O^+ + OH^-$ Or more simply….. $H_2O \rightleftharpoons H^+ + OH^-$ $K_w = [H_3O^+][OH^-] = 1 \times 10^{-14}$	Calculator Warning!! Enter a number like 1.05×10^{-3} as 1 . 0 5 EXP (-) 3 Significant figures!! It will usually be 3 e.g. 0.0150, 2.04×10^{-8}, 4.50, 12.8 etc	Calculations: salt solutions that affect the pH of water ones that make the water acidic e.g. NH_4Cl $K_a = [H_3O^+]^2 / [salt]$ ones that make the water alkaline e.g. CH_3COONa $K_b = [OH^-]^2 / [salt]$

Highlighted formula will be provided on the Resource Sheet