Acid and Base Titrations - Guide to Symbols

$\mathbf{n_{sa}}$ = moles of strong acid
$\mathbf{n_{sb}}$ = moles of strong base
$\mathbf{n_{wa}}$ = moles of weak acid
$\mathbf{n_{wb}}$ = moles of weak base
$\mathbf{n_{ca}}$ = moles of conjugate acid
$\mathbf{n_{cb}}$ = moles of conjugate base

$\mathbf{V_{sa}}$ = volume of strong acid
$\mathbf{V_{sb}}$ = volume of strong base
$\mathbf{V_{wa}}$ = volume of weak acid
$\mathbf{V_{wb}}$ = volume of weak base
$\mathbf{V_{ca}}$ = volume of conjugate acid
$\mathbf{V_{cb}}$ = volume of conjugate base

$\mathbf{C_{sa}}$ = concentration of strong acid
$\mathbf{C_{sb}}$ = concentration of strong base
$\mathbf{C_{wa}}$ = concentration of weak acid
$\mathbf{C_{wb}}$ = concentration of weak base
$\mathbf{C_{ca}}$ = concentration of conjugate acid
$\mathbf{C_{cb}}$ = concentration of conjugate base

$\mathbf{K_a}$ = acid dissociation constant for a weak acid
$\mathbf{pK_a = - \log K_a}$
$\mathbf{K_a = 10^{-pKa}}$

$\mathbf{K_b}$ = base dissociation constant for a weak base
$\mathbf{pK_b = - \log K_b}$
$\mathbf{K_b = 10^{-pKb}}$

$\mathbf{K_w = 10^{-14}}$ = autoionization constant for water at 25 ˚C
Also, $\mathbf{K_w = [H_3O^+]*[OH^-] = K_a*K_b = 10^{-14}}$

$\mathbf{pH = - \log [H_3O^+]}$

$\mathbf{pOH = - \log [OH^-]}$

$\mathbf{14 = pH + pOH = pK_a + pK_b}$