- weak acid + strong base
  0.1 M acetic acid 0.1M NaOH
  Initial pH = 2.87
  - After 20mL NaOH added
    Initial moles HA = 0.050L * 0.1 mol/L = 0.005 mol
    Moles OH^- added = 0.020L * 0.1 mol/L = 0.002 mol
    $OH^- + HA \rightarrow A^- + H_2O$
    Moles A^- = moles OH^- added = 0.002 mol
    Equilibrium moles HA = HA moles initial – moles OH^- added = 0.003 mol
    pH = pKa + log $[A^-]/[HA]$
    = pKa + log A^-mol/HA mol
    = 4.75 + log 0.002/0.003
    = 4.56
  - After 50mL NaOH added
    Initial moles HA = 0.050L * 0.1 mol/L = 0.005 mol
    Moles OH^- added = 0.050L * 0.1 mol/L = 0.005 mol
    Moles A^- = moles OH^- added = 0.005 mol
    Equilibrium moles HA = HA moles initial – moles OH- added = 0 mol
    Concentration A- = 0.005 mol / 0.1 L = 0.05 M
    CH3COO- + H2O ⇋ OH- + CH3COOH
    Acetate acetic acid
    pKb = pKw -pKa
    = 14 – 4.75
    = 9.25
    Ka * Kb = Kw
    Kb = $5.6 * 10^{-10}$

	CH3COO-	OH-	CH3COOH
I	0.05	0	0
C	-x	+x	+x
E	0.05-x	x	x

    $x^2/(0.05-x) = 5.6*10^{-10}$
    $x^2/0.05 = 5.6*10^{-10}$
    $x = 5.3*10^{-6}$
    pOH = 5.28, pH = 8.72