$$H_3PO_4 \xrightarrow{K_{a1}} \boxed{H_2PO_4^- \xrightarrow{K_{a2}} HPO_4^{-2}} \xrightarrow{K_{a3}} PO_4^{-3}$$

6.5g NaH_2PO_4 8g Na_2HPO_4 (355 mL)

$$\frac{6.5g\ NaH_2PO_4}{0.355\ \ell} \cdot \frac{1\ mole\ NaH_2PO_4}{120\ g\ NaH_2PO_4} = 0.15M\ NaH_2PO_4 \quad (A)$$

$$\frac{8g\ Na_2HPO_4}{0.355\ \ell} \cdot \frac{1\ mole\ Na_2HPO_4}{142\ g\ Na_2HPO_4} = 0.16M\ Na_2HPO_4 \quad (B)$$

$$pH = -\log\left(6.2 \times 10^{-8}\right) + \log\frac{0.16}{0.15} = 7.22$$

Mar 4-7:43 AM

① Identify the items you have.

     SA/WA   SB/WB.

100% →   RICE TABLE

$$K_a \ * \ K_b = K_w$$

② Always use **Net** ionic eqn.

③ Buffer. (WA + Salt of WA) Same anion.   HX and $Na\ X$

$$pH = pKa + \log\frac{b}{a}$$

④ Adding SA or SB to buffer. (Neut)

P727 { ① Neutralize → MOLES   subt. smaller #
       ② recalc. new M
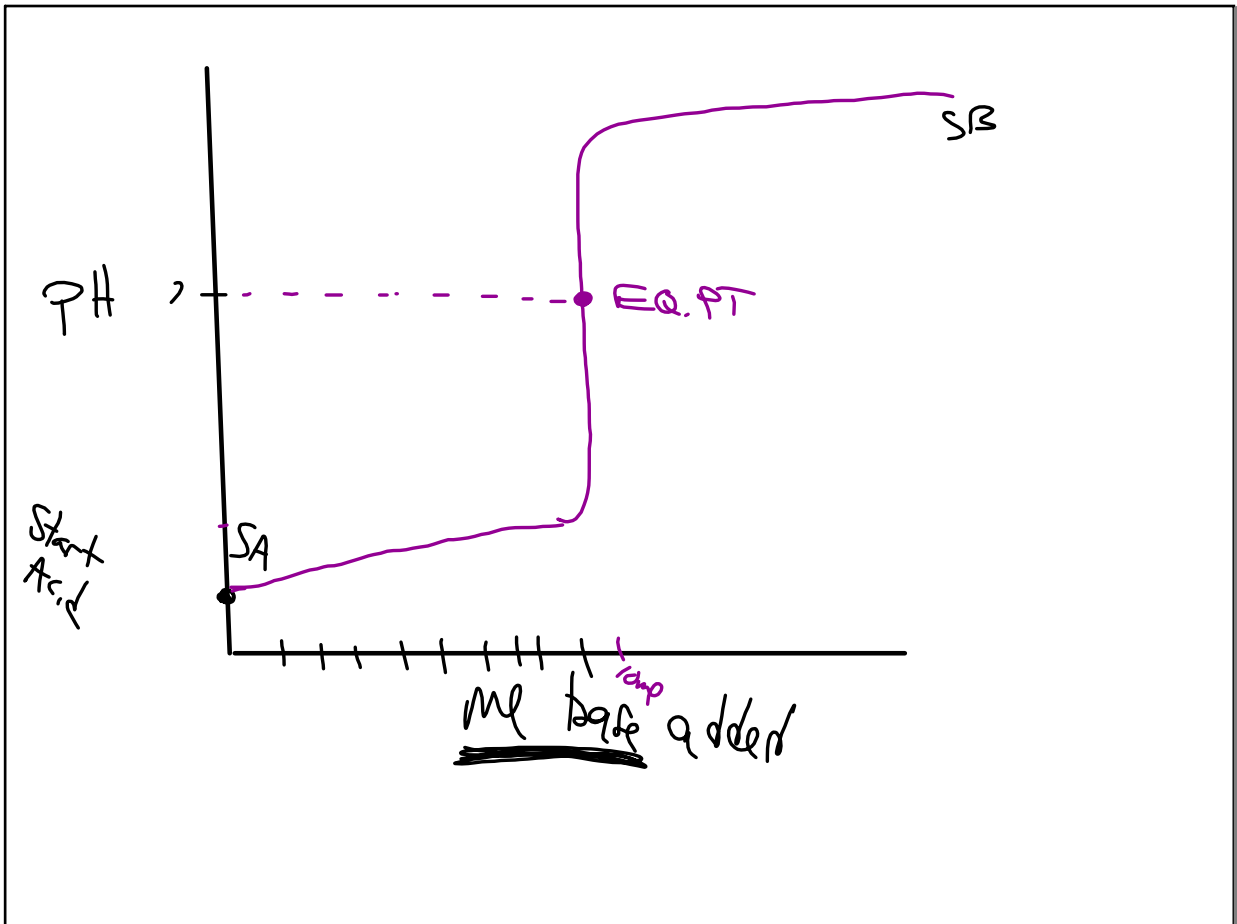   ③ Solve pH, pOH, H^+, OH^-

Mar 4-8:17 AM

Equivalence Point   Moles A = Moles B

                                              pH ≈ 7

End point → Colormetric indicator
                          Changes color.

Mar 4-8:28 AM

Mar 4-8:29 AM

SA/SB

pH

SA

SB

ml Base added

WA/SB

pH

WA

SB

ml Base added

SA/WB

pH

SA

WB

WA/WB

WA

WB
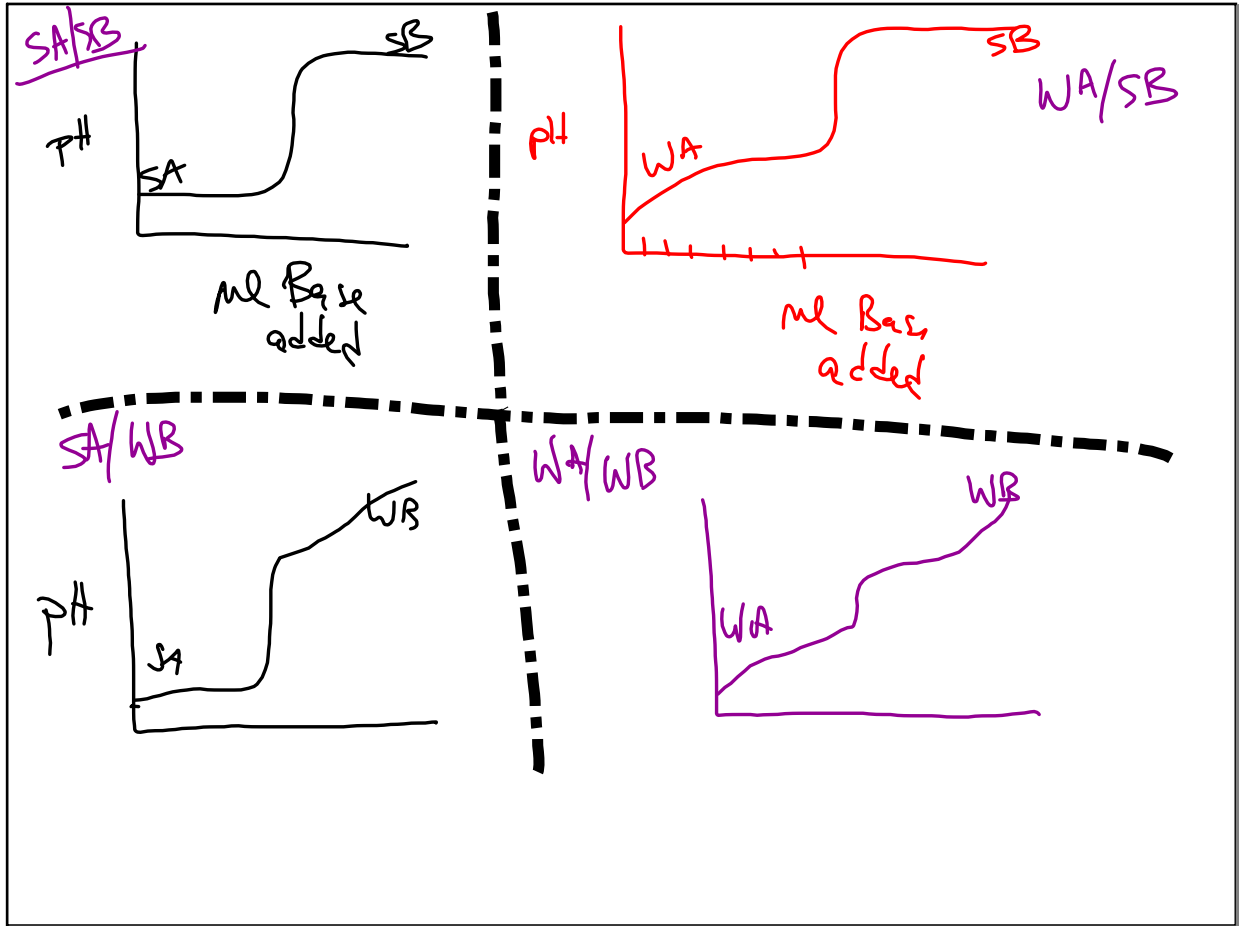
Mar 4-8:33 AM

Regents chem Titration

(Equv. P-1.)

moles Acid = moles Base.

$$n_A * M_A * l_A = n_B * M_B * l_B$$

H's

OH

Mar 4-8:36 AM

49 ml 0.1M NaOH +   50 ml 0.1M HCl
                 SB   SA
4.9×10^{-3} moles 5×10^{-3} moles

~~HCl~~ + ~~NaOH~~ → ~~NaCl~~ + HOH

① Neut. using MOLES!

$H^+ + OH^- \rightarrow HOH$

Moles, 5×10^{-3} 4.9×10^{-3}
neut -4.9 -4.9

1×10^{-4} mole H^+ left over

$\dfrac{1 \times 10^{-4} \text{ Mole } H^+}{99 \times 10^{-3} \ell} =$ new → $\boxed{1 \times 10^{-3} M H^+}$

① Neut
   Mole,

② Recalc M

pH = 3

Mar 4-8:38 AM

17/ 33, 42 a, c, e

Mar 4-8:45 AM