$HA + KOH \rightarrow KA + H_2O$

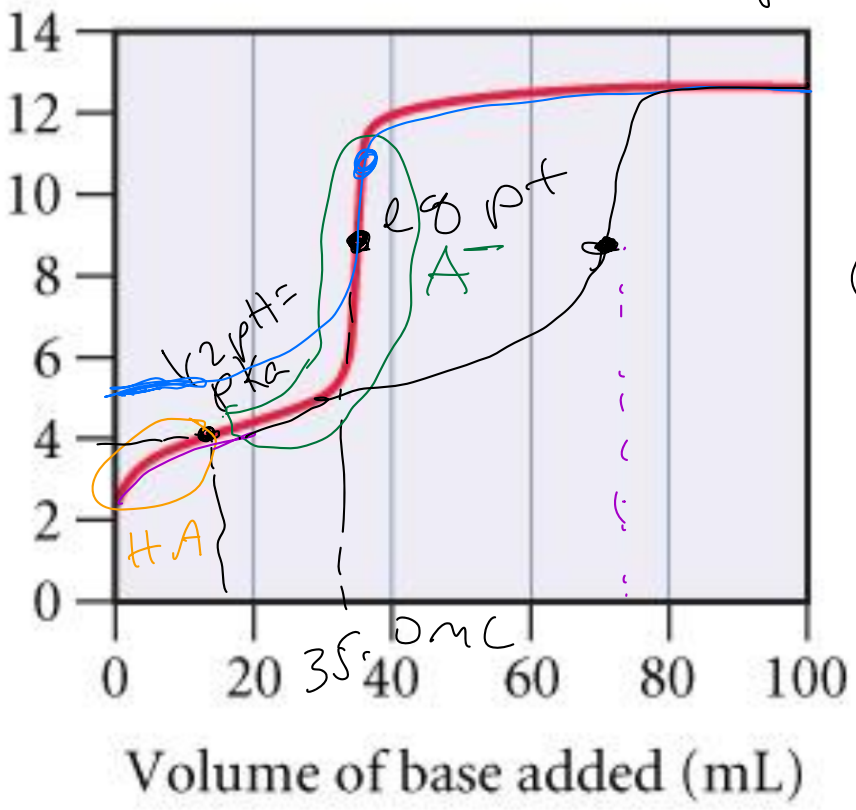
(aq) (aq)

For the titration curve of 1.00g of HA with KOH shown below

- Write the balanced equation for the titration reaction
- Label the Y-axis
- Label the graph to show where HA is the major species present
- Label the graph to show where A^- is the major species present
- Label the equivalence and half equivalence points
- Show on the graph the point at when the reaction is over
- If the titrant concentration is 0.200M, find the molar mass of HA
- What is the K_a of the acid?
- Explain the equivalence point pH (why it isn't 7)
- Sketch the titration curve for a *weaker* acid that has about the same molar mass as HA
- Sketch the titration curve for an acid that has the same K_a as HA but a molar mass that is *half* that of HA
- Circle the region of the curve at which you'd want a visual acid-base indicator to change color

steep @ higher pH
- blue curve
- purple twice the volume of titrant

→ around the eq. pt



reaction is complete @ eq. pt b/c mol acid = mol base

35.0mL @ eq. pt and 0.200M

mol acid = mol base

Find mol base added

molar mass: $\frac{g}{mol}$

molar mass: $\frac{1.09}{0.00700 mol} = 143 g/mol$

$0.200 \frac{mol}{L} \times 0.0350 L = 0.00700 mol$

also mol of HA

(a) 1/2 pt pH = pka

pka = 4

$= -\log(Ka)$

$Ka = 10^{-4}$

* pH is 7 b/c a basic salt was produced