

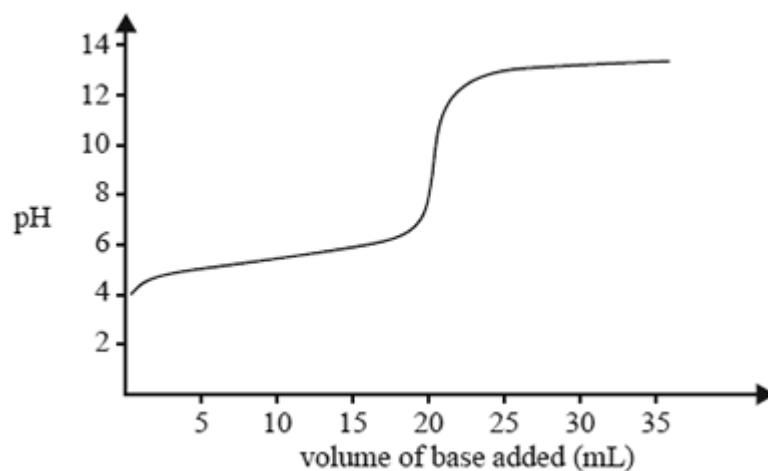
Friday Worksheet

Name:

Volumetric 3

1) The change in pH as a 0.10 M solution of a NaOH is added to 20.0 mL of a 0.10 M solution of a ethanoic acid is shown below.

Acid-base indicators			
Name	pH range	Colour change	
		Acid	Base
Thymol blue	1.2–2.8	red	yellow
Methyl orange	3.1–4.4	red	yellow
Bromophenol blue	3.0–4.6	yellow	blue
Methyl red	4.2–6.3	red	yellow
Bromothymol blue	6.0–7.6	yellow	blue
Phenol red	6.8–8.4	yellow	red
Phenolphthalein	8.3–10.0	colourless	red



Refer to the acid-base indicator data provided and identify the indicator that would be **least** suitable to detect the end point of this neutralisation reaction. Explain why.

2) A 30.00 mL aliquot of 0.200 M CH_3COOH (ethanoic acid) is titrated with 0.160 M $\text{Ca}(\text{OH})_2$ solution.

a) Give the equation for the reaction between the ethanoic acid and $\text{Ca}(\text{OH})_2$

b) What volume of the $\text{Ca}(\text{OH})_2$ solution is required to completely react with the ethanoic acid?

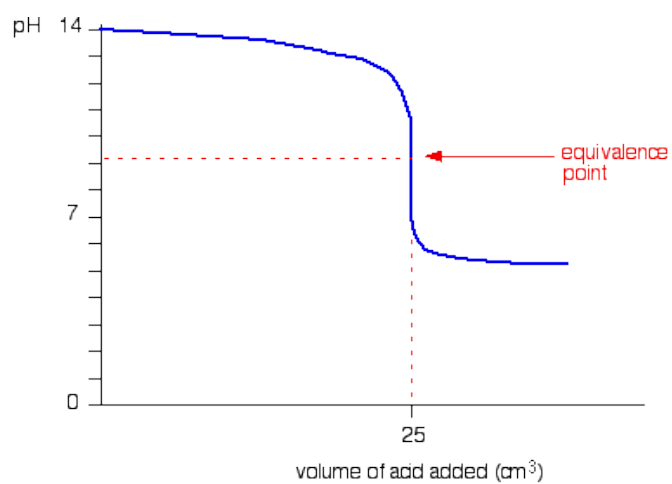
3) Consider the titration curve on the right.

a) What is the likely acid being used from the list below? Explain

i) HCl

ii) H₂SO₄

iii) NH₄⁺



b) Explain, using your chosen acid as an example, why the equivalence point is at a pH significantly above 7.