1 Find the pH of 0.20 mol dm$^{-3}$ ethanoic acid. ($pK_a = 4.76$)

2 Find the pH of a mixture of 20.0 cm$^3$ of 0.20 mol dm$^{-3}$ ethanoic acid and 50.0 cm$^3$ 0.10 mol dm$^{-3}$ sodium hydroxide. ($pK_a$ for ethanoic acid = 4.76)

3 Sketch the pH curve to show how the pH changes as 50.0 cm$^3$ 0.10 mol dm$^{-3}$ sodium hydroxide is added to 20.0 cm$^3$ of 0.20 mol dm$^{-3}$ ethanoic acid. Mark on the volume of sodium hydroxide needed for equivalence.

4 What is an equivalence point?

5 Estimate the pH at the equivalence point.

6 Identify a suitable indicator that changes colour at the equivalence point.