

Volumetric 1

1) Explain the difference between the terms end point and equivalence point?

The end point, during a titration is reached when the indicator changes colour. This indicates to the chemist that the reactants are mixed in the right stoichiometric ratio. The colour change, however, happens a little after the equivalence point. The equivalence point is exactly where the reactants are mixed in the right stoichiometric ratios, but this does not cause the indicator to change colour so another drop is added and at this point the colour change is observed.

2) Consider the titration curve shown on the right. Select from the words below to complete the following sentences.

Weak, strong, conical flask, volumetric flask, pipette, burette, concordant, equivalence point, end point.

a) This is a titration between a **weak** acid and a **weak** base.

b) The acid is placed in the **burette** while the base is placed in the **conical flask**

c) Nearing the end of a titration the **equivalence** is reached just before the **end** point

d) When washing the glassware with water a student forgot to dry one of the apparatus before using it. Water left in the **volumetric flask** or **conical flask** would result in no change to the average titre.

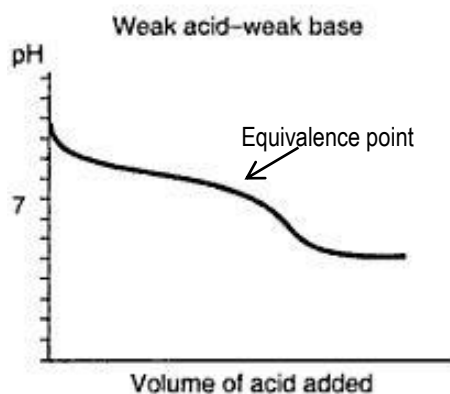
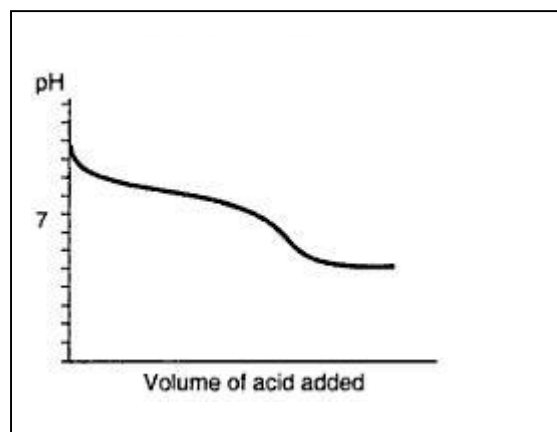
e) When washing the glassware with water a student forgot to dry one of the apparatus before using it. Water left in the **pipette** would result in a lower average titre.

f) When washing the glassware with water a student forgot to dry one of the apparatus before using it. Water left in the **burette** would result in a higher average titre.

g) Explain why none of the indicators below can be used during this titration?

There is any steep bit on this graph just a point of inflexion.

Instead, there is jus It is difficult to conduct a titration of a weak base using a weak acid. The indicator will change colour at appoint not close to the equivalence point.



h) Consider the titration curve shown on the right. Select an appropriate indicator for this titration. Explain.

Methyl red. This indicator changes colour between pH of 4.2 and 6.3. The equivalence point lies within this range.

i) What is the colour change?

From yellow to red

