◉ ⚙ ✕ ⛉ ⚗ ▽ TITRATION AS91161 v2 ⚚ ✕ ⚙ ✧ ⬨

Be prepared! Label your beakers!! A = acid B = base (a.k.a alkali but 2 x "A" = disaster waiting to happen!)

Rinse out (prepare) your clean burette with whatever you are filling it with! Make sure the jet…. • Is rinsed too • Is full / has no air bubbles	Rinse out (prepare) your clean pipette with whatever you are going to be pipetting into the conical flask.	Wash your conical flask with tap water AND then rinse it with distilled water. It does NOT have to be dry – no, really it doesn't!

A COMMON SET UP IS…… to put the acid in burette and base in the flask……

- Although you may place the alkali (base) in the burette and the acid in the flask.
- Just check what your instructions say!
- Only add 3 drops of indicator to the conical flask!

Burette containing acid

Clamp stand

Known volume of alkali containing a few drops of indicator
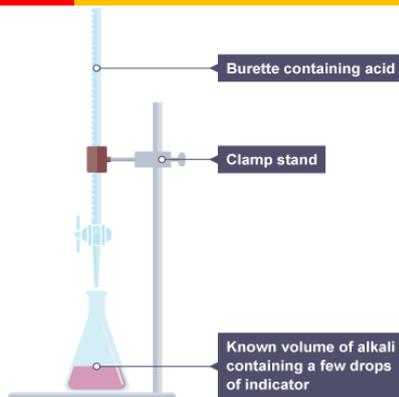
If it says "Titrate 20.0 mL samples of the dilute sulfuric acid solution with the standardised sodium hydroxide solution using phenolphthalein indicator", THEN

- the "sample of …" goes in the flask, and
- The "with …" is placed in the burette

$H_2SO_4 + 2NaOH \rightarrow Na_2SO_4 + 2H_2O$ (you will be given the equation for the reaction)

Acid in the burette, base in the flask. End point is pink to colourless.

Base in the burette, acid in the flask. End point is colourless to (pale) pink.
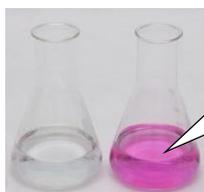
A lot paler than this if you can!

Volume in mL

18

19

19.82
19.70
19.62

20

21
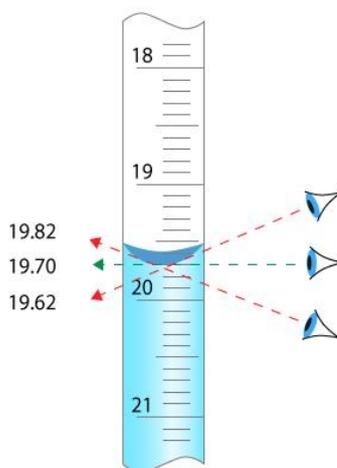
Read the volume in the burette at the bottom of meniscus.

This avoids PARALLAX ERROR!

Volume is 25.10 mL

(2 d.p.)

22
23
24
25
26
27
28

Record your results in a "systematic format". A table like the one below is a good way to do this. You may need extra columns but we hope not too many!

	Rough	1	2	3	4
Final volume (mL)					
Initial volume (mL)					
Volume used (mL)					

For Excellence you need (at least) 3 concordant that fall within a 0.20 mL range

SUGGESTION
Don't waste time refilling the burette to 0.00 mL each time… IF you have enough solution in the burette for your next titration, start where the last titration ended! Do a quick calc. first!

Calculation Summary… as easy as n, n, c

1. n (of the "stuff" you know both c and V of) – Remember V must be in L ! (mL/1000)
2. n (of the other "stuff" – by mol ratio in equation provided). Will be answer #1. ×2 or ÷2 (Get it right !)
3. c (of the "stuff" whose conc. you were asked to find out!) Use the right volume, again in L !

Memorise
n = c V
c = n / V
Give your final answer to 3 s.f.