Year 12 Science: Titration: how much acid is really in the vinegar?

Name: _____ Date: _____

Try these without your notes first, then check the answer key.

Practice

1. 2.650 g of anhydrous sodium carbonate (M = 105.99 g mol^{-1}) is made up to 250.0 mL. Find its concentration.

2. A student's titres are 22.60 (rough), 22.15, 22.40, 22.20 and 22.10 mL. Which are concordant, and what is the mean titre?

3. $Na_2CO_3 + 2HCl \rightarrow 2NaCl + H_2O + CO_2$. 20.00 mL of 0.1000 mol L^{-1} Na_2CO_3 needs 22.15 mL of HCl. Find c(HCl).

4. A cleaner is diluted 25.00 mL to 250.0 mL, and the diluted solution is 0.0850 mol L^{-1}. What is the concentration in the bottle?

5. Explain why the student standardised the sodium hydroxide instead of weighing out the pellets.

Fix the mistake

6. Correct this statement: "I averaged all four titres, including the rough one."

7. Correct this statement: "n(NaOH) = n($H_2C_2O_4$), so c(NaOH) = 0.04870 mol L^{-1}."

8. Correct this statement: "The vinegar's concentration is 0.07013 mol L^{-1}."

9. Correct this statement: "I rinsed the burette with distilled water before filling it with NaOH."