Year 13 Science: A quantitative chemistry investigation: titration analysis

Name: _____ Date: _____

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

Practice

1. 1.325 g of anhydrous sodium carbonate (M = 106.0 g mol^{-1}) is made up to 250.0 mL. What is its concentration?

2. 20.00 mL of that solution needs 21.60 mL of hydrochloric acid: $Na_2CO_3 + 2HCl \rightarrow 2NaCl + H_2O + CO_2$. What is the acid's concentration?

3. Titres of 18.35, 18.70, 18.40 and 18.30 mL were recorded. What mean titre should be used?

4. A 2.00 g sample of impure ascorbic acid contains 1.76 g of $C_6H_8O_6$. What is its percentage purity?

5. A student forgot to rinse the burette with iodine solution, leaving it wet with water. Would the vitamin C results come out too high or too low?

Fix the mistake

6. Correct this statement: "I rinsed the conical flask with the juice so it would not be diluted."

7. Correct this statement: "My titres were 13.25, 13.15 and 13.80 mL, so the mean titre is 13.40 mL."

8. Correct this statement: "The 10.00 mL portion contained 2.809×10^{-4} mol, so the tablet contained 0.0494 g."

9. Correct this statement: "My results were very precise, so they must be accurate."