

May 11th '11.

Titration.

$$[] = \frac{\text{mol}}{\text{volume}}$$

Question

In a titration, a 25.0 cm^3 sample of nitric acid HNO_3 reacted with 20.0 cm^3 of sodium hydroxide NaOH of concentration 0.4 M



(b) How much NaOH ? $\frac{20}{1000} \times 0.4 \text{ M} = 0.008 \text{ mol}$

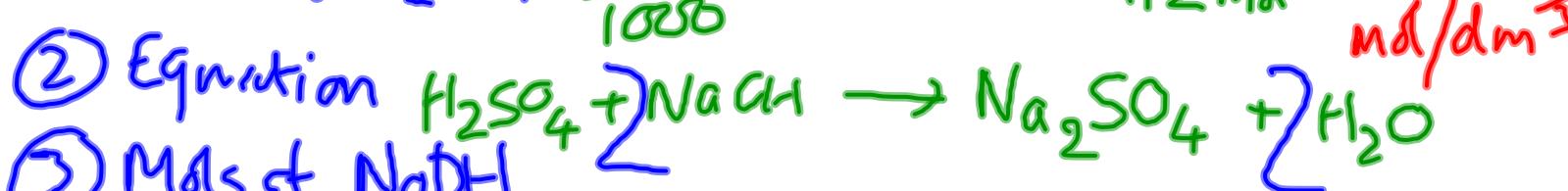
(c) How much HNO_3 ? 0.008 mol

(d) What was $[\text{HNO}_3]$? $\frac{0.008 \text{ mol} \times 1000 \text{ cm}^3}{25.0 \text{ cm}^3} = 0.32 \text{ M}$

Question 2

A student has an unknown 25 cm^3 sample of sodium hydroxide (NaOH) solution. She finds it reacts completely with 22.4 cm^3 of 0.5 M sulphuric acid (H_2SO_4). What was $[\text{NaOH}]$?

① Mols of H_2SO_4 $\frac{22.4}{1000} \times 0.5 = 0.0112\text{ mol}$



③ Mols of NaOH 0.0224 mol

④ $[\text{NaOH}]$ $0.0224 \times \frac{1000}{25} = 0.896\text{ M}$

$[HCl]$ 0.5M



$[NaOH]$?

- ① Moles of HCl ?
- ② Moles of $NaOH$?
- ③ $[NaOH]$?