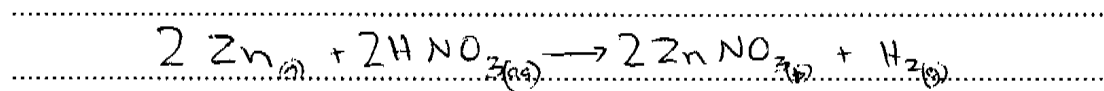


Question 26 (4 marks)

A gas is produced when 10.0 g of zinc is placed in 0.50 L of 0.20 mol L⁻¹ nitric acid. **4**

Calculate the volume of gas produced at 25°C and 100 kPa. Include a balanced chemical equation in your answer.



$$\begin{aligned}
 n_{\text{Zn}} &= m/M & \therefore n_{\text{H}} &= 0.1529 \div 2 & \therefore n_{\text{H}} &= V/mV \\
 &= 10/65.41 & &= 0.0764 & 0.0764 &= V/24.79 \\
 &= 0.1529 \text{ mol} & & & V &= 0.0764 \times 24.79 \\
 & & & & &= 1.8990 \text{ L}
 \end{aligned}$$