1 a What is a Bronsted-Lowry acid? **proton donor**

b Identify the Bronsted-Lowry acid in this reaction. $H_2O + CH_3NH_2 \rightarrow OH^- + CH_3NH_3^+$ **H_2O**

2 a Define pH. **$pH = -\log[H^+]$**

b Calculate the pH of a solution of nitric acid with concentration 0.200 mol dm^{-3}.

$pH = -\log[H^+] = -\log 0.200 = 0.70$

c Calculate the concentration of a solution of sulfuric acid with pH 1.30.

$[H^+] = 10^{-pH} = 10^{-1.30} = 0.0501$

$[H_2SO_4] = 0.0251$

d Calculate the pH of the solution formed when 200 cm^3 of water is added to 50 cm^3 of 0.800 mol dm^{-3} hydrochloric acid.

$[H^+] = 0.800 \times \frac{50}{250} = 0.160$

$pH = -\log[H^+] = -\log 0.160 = 0.80$