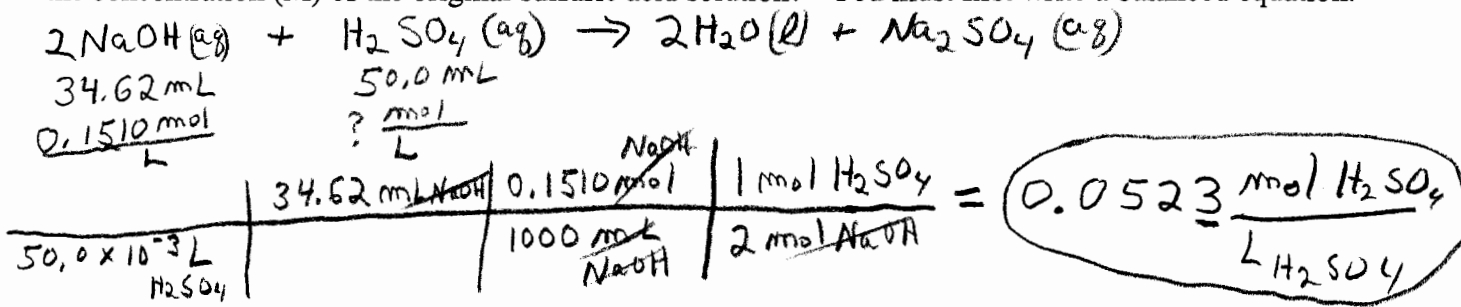


Show all work to receive credit.

Atomic masses: H 1.008, C 12.01, N 14.01, O 16.00

1. (2 Pts) The oxidation number of N in NaNO_3 is +5 $\frac{+1}{\text{N}} + \frac{X}{\text{N}} + \frac{3(-2)}{\text{O}} = 0$

2. (6 Pts) 34.62 mL of 0.1510 M NaOH was needed to neutralize 50.0 mL of an H_2SO_4 solution. What is the concentration (M) of the original sulfuric acid solution? You must first write a balanced equation.



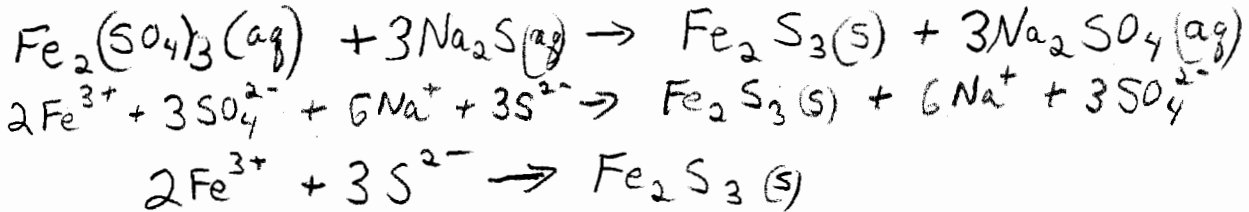
3. (5 Pts) A 50.0 mL sample of 0.436 M NH_4NO_3 is diluted with water to a total volume of 250.0 mL. What is the ammonium nitrate concentration in the resulting solution?

$M_1 V_1 = M_2 V_2$

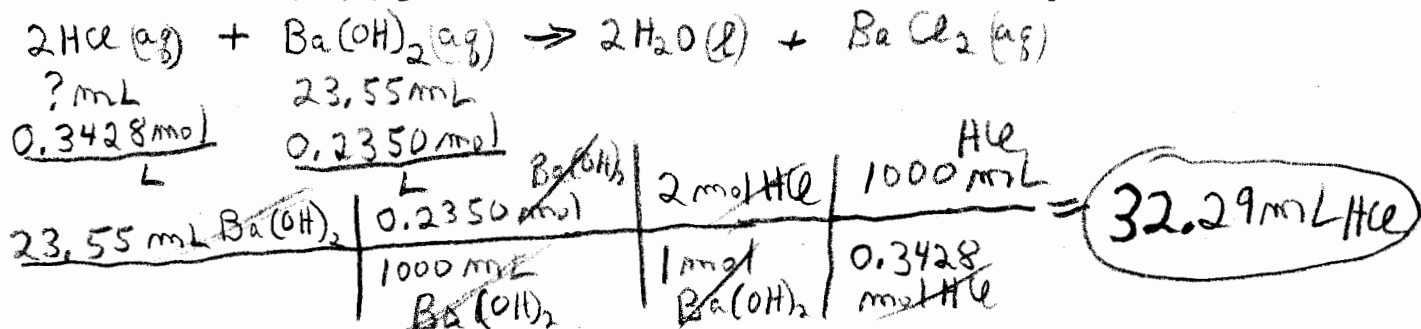
$(50.0 \text{ mL})(0.436 \text{ M}) = M_2(250.0 \text{ mL})$

$M_2 = 0.0872 \text{ M}$

4. (2 Pts) Write the net ionic equation for reaction that occurs when aqueous iron(III) sulfate is added to aqueous sodium sulfide to produce solid iron(III) sulfide and aqueous sodium sulfate.



5. (5 Pts) What volume (mL) of a 0.3428 M $\text{HCl}(aq)$ solution is required to completely neutralize 23.55 mL of a 0.2350 M $\text{Ba}(\text{OH})_2(aq)$ solution? You must first write out a balanced equation.



6. (5 Pts) What mass of $\text{C}_6\text{H}_{12}\text{O}_6$ (glucose) is needed to prepare 450. mL of a 0.650 M solution of glucose in water?

$(6 \times 12.01) + (12 \times 1.008) + (6 \times 16.00) = 180.16 \text{ g/mol}$

$450. \text{ mL}$	0.650 mol/L	180.16 g/mol	$= 52.7 \text{ g}$
	1000 mL	mol	