

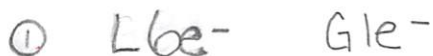
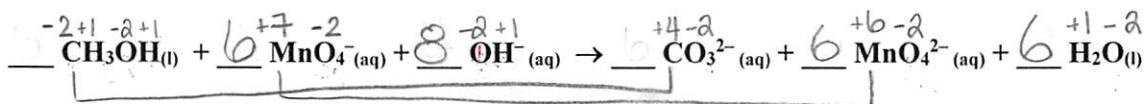
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1. Use the **oxidation number method for balancing** to balance the following equation as well as **determine the concentration of potassium permanganate** if it is titrated with 10.0 mL of a 0.500 mol/L ethanol solution:

Titration of potassium permanganate with ethanol	1	2	3	4
Initial reading (mL)	0	11.6	23.0	35.5
Final reading (mL)	11.6	23.0	35.5	47.0
Volume used (mL)	11.6	11.4	12.5	11.5

AUG = 11.5 mL

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④ C = 0.500 M
V = 0.0100 L

C = ?
V = 0.0115 L

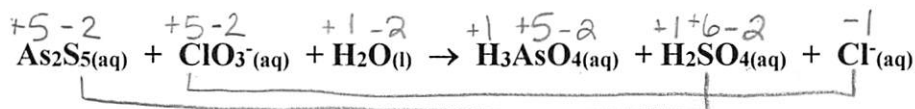
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⑤ $n_{\text{CH}_3\text{OH}} = CV = 0.005 \text{ mol}$

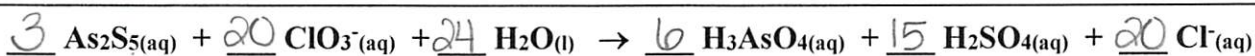
$n_{\text{MnO}_4} = 0.005 \times \frac{6}{1} = 0.0300 \text{ mol}$

$C_{\text{MnO}_4} = \frac{n}{V} = \frac{0.0300 \text{ mol}}{0.0115 \text{ L}} = 2.61 \text{ mol/L}$

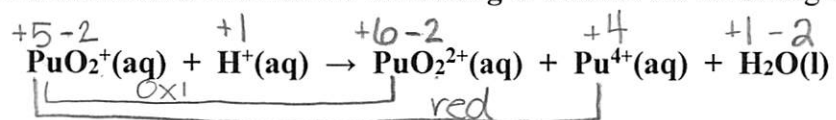
2. Use the oxidation number method for balancing to balance the following equation:



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3. Use the **oxidation number method for balancing** to balance the following equation:



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