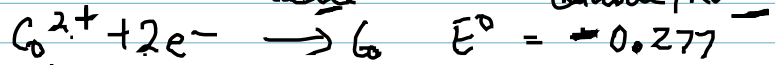
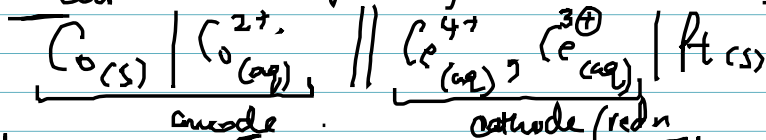


Sample 1

Electrochem ④ Calculating E° .

- 1) Determine the E° for $\text{Ce}^{4+} + e^- \rightarrow \text{Ce}^{3+}$ given the E°_{cell} for the following reaction is 1.887 V



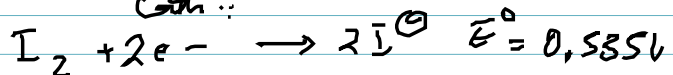
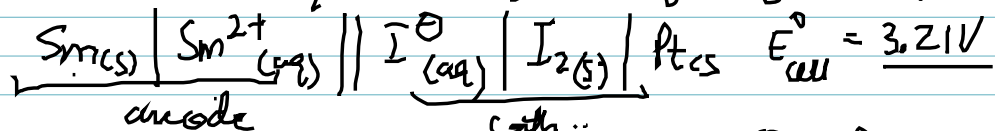
$$E_{\text{cell}} = E_{\text{cath.}} - E_{\text{anode}}$$

$$1.887 \text{ V} = E_{\text{cath.}} - (-0.277)$$

$$1.887 - 0.277 = E_{\text{cath.}}$$

$$\boxed{E_{\text{cath.}} = 1.610 \text{ V}}$$

- ② Determine $E^\circ_{\text{Sm}^{2+}/\text{Sm}}$ using the following cell info.



$$E^\circ_{\text{cell}} = E^\circ_{\text{cath.}} - E^\circ_{\text{anode}}$$

$$3.21 \text{ V} = 0.535 - E_{\text{anode}}$$

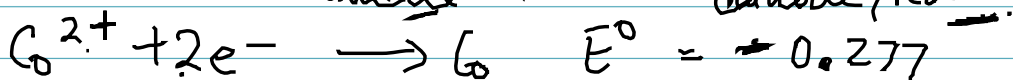
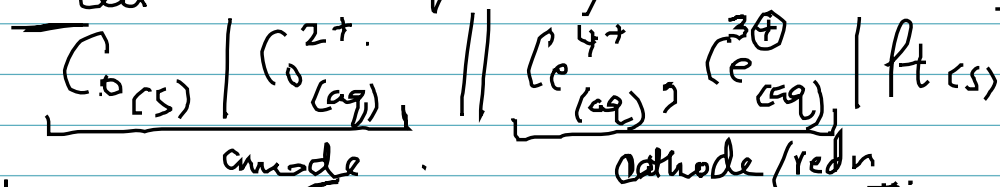
$$3.21 - 0.535 = -E_{\text{anode}}$$

$$\boxed{E_{\text{anode}} = -2.67}$$

Separately.

Electrochem (4) Calculating E°

1) Determine the E° for $\text{Ce}^{4+} + e^- \rightarrow \text{Ce}^{3+}$ given the E°_{cell} for the following reaction is 1.887 V



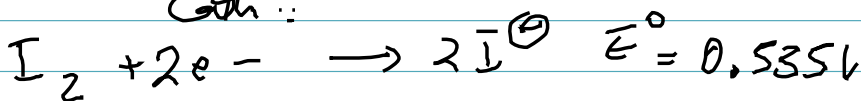
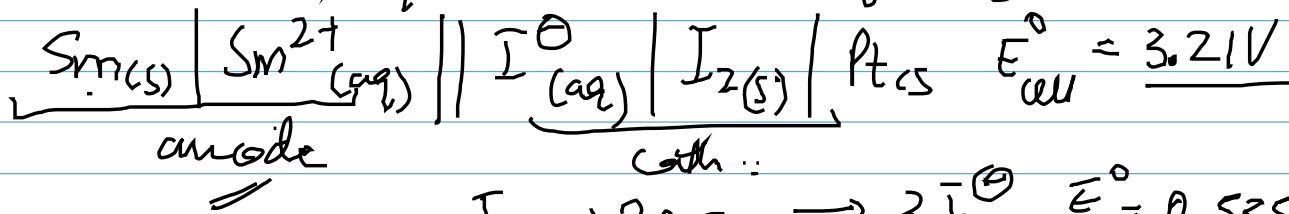
$$E_{\text{cell}} = E_{\text{cath.}} - E_{\text{anode}}$$

$$1.887 \text{ V} = E_{\text{cath.}} - (-0.277)$$

$$1.887 - 0.277 = E_{\text{cath.}}$$

$$\boxed{E_{\text{cath.}} = 1.610 \text{ V}}$$

2) Determine $E^\circ_{\text{Sm}^{2+}/\text{Sm}}$ using the following cell info.



$$E^\circ_{\text{cell}} = E^\circ_{\text{cath.}} - E^\circ_{\text{anode}}$$

$$3.21 \text{ V} = 0.535 - E_{\text{anode}}$$

$$3.21 - 0.535 = -E_{\text{anode}}$$

$$\boxed{E_{\text{anode}} = -2.67}$$