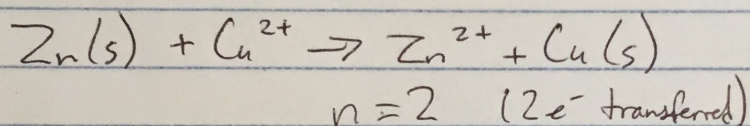
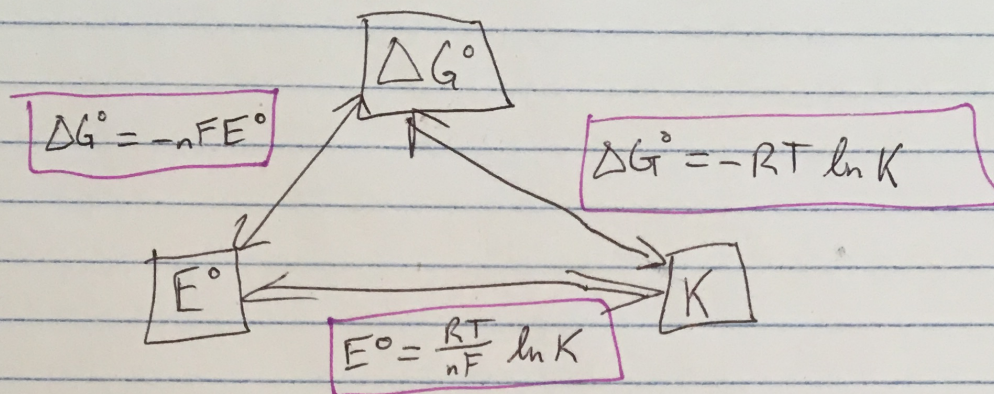


$E^\circ_{\text{cell}} > 0 \Rightarrow \text{rxn spontaneous}$
 $\Delta G^\circ < 0 \Rightarrow \text{rxn spontaneous}$



Calc ΔG° and K for $\text{Mg}(s) + \text{Cu}^{2+}(\text{aq}) \rightarrow \text{Mg}^{2+}(\text{aq}) + \text{Cu}(s)$
 in a voltaic cell producing $2.71 \text{ V} = E^\circ_{\text{cell}}$

$$\begin{aligned}
 \Delta G^\circ &= -nF E^\circ_{\text{cell}} \\
 &= -2(96500 \text{ C/mol})(2.71 \text{ V}) \\
 &= -523,030 \text{ J} = -523 \text{ kJ}
 \end{aligned}$$

$$K = e^{-\Delta G^\circ / RT}$$