

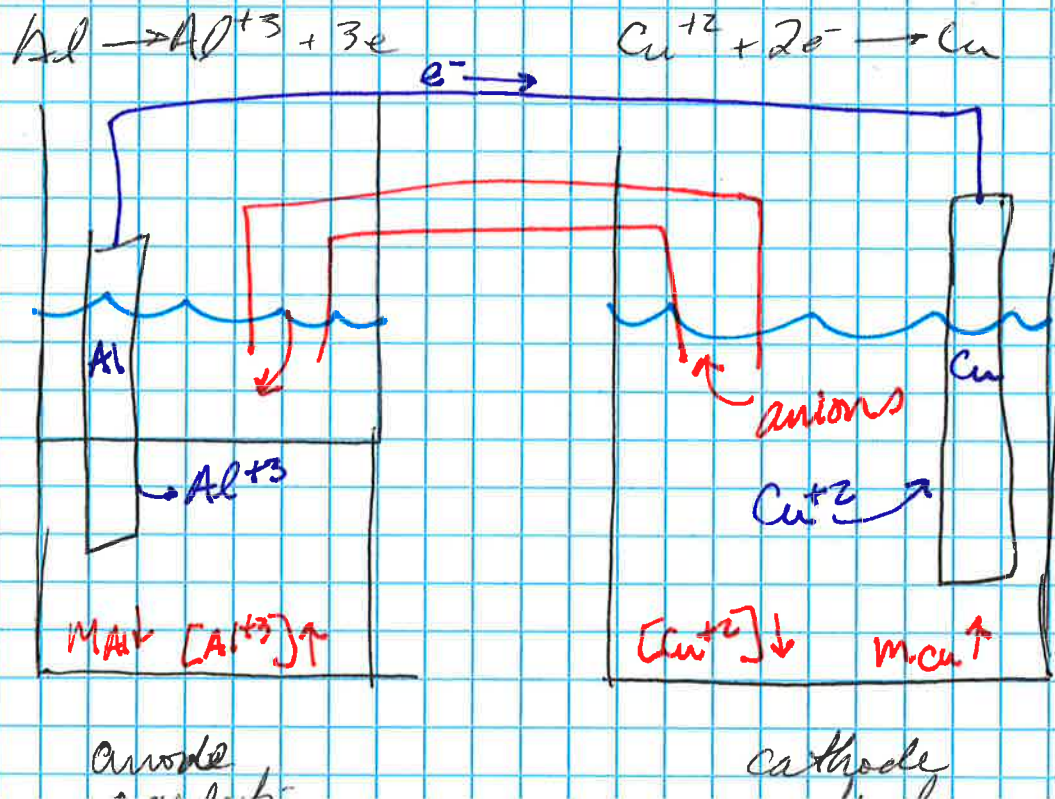
# General Chemistry w/ Dr M

Tuesday 3/31 Section 18.2-18.4

Monday 4/2 Review session (Last One before Test)  
HTL 108 5-7:30

Monday 4/3 sections 18.7-18.14 (Exam 5)

Wednesday 4/5 Exam 4  
Checklist at website  
Answers to worksheets  
Old exam



$$\Delta G = -nFE$$

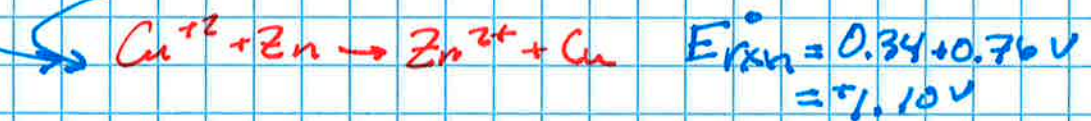
Galvanic cells are spontaneous

$$\Delta G^\circ < 0$$

( ~~$\Delta G < 0$~~ )

$$E^\circ > 0$$

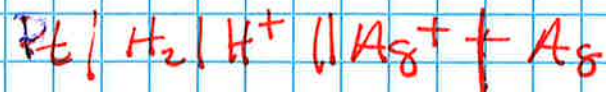
( ~~$E > 0$~~ )



and



$\hookrightarrow$



is this a galvanic cell?



$\Delta G^\circ < 0$  ( $E^\circ > 0$ ) spontaneous

$\Delta G^\circ \approx 0$  equilibrium state is measurable

$\Delta G^\circ > 0$  ( $E^\circ < 0$ ) ~~non-spontaneous~~ non-spontaneous

$$\Delta G^\circ = -nFE^\circ \quad \Delta G^\circ = -RT \ln K_c$$

$$= -2 \text{ mole}^- \left( \frac{96500 \text{ J}}{\text{mole}^- \text{ V}} \right) (0.14 \text{ V})$$

$$= -27000 \text{ J}$$

$$= -27.0 \text{ J}$$

$$\Delta G^\circ = -nFE^\circ \quad \Delta G^\circ = -RT \ln K_c$$

$$nFE^\circ = RT \ln K_c$$

$$E^\circ = \frac{RT}{nF} \ln K_c$$

$$0.14 \text{ V} = \frac{8.314 \text{ J}}{\text{K}} \times 298 \text{ K} \times \frac{1}{2 \text{ mole}^-} \times \frac{\text{mole}^- \text{ V} \times \ln K_c}{96500 \text{ J}}$$

$$\ln K_c = 10.91$$

$$K_c = 5.1 \times 10^4$$