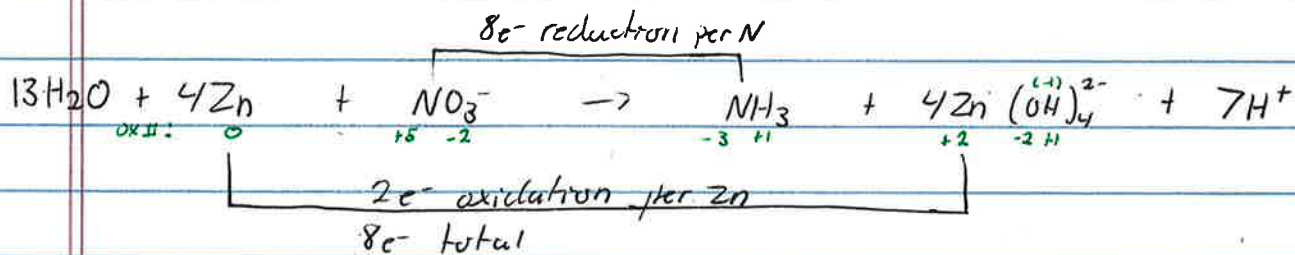


Today April 4, review day 1 chap 18, sect. 18.6-18.9

Thursday: expt 10

Friday: finish ch 18

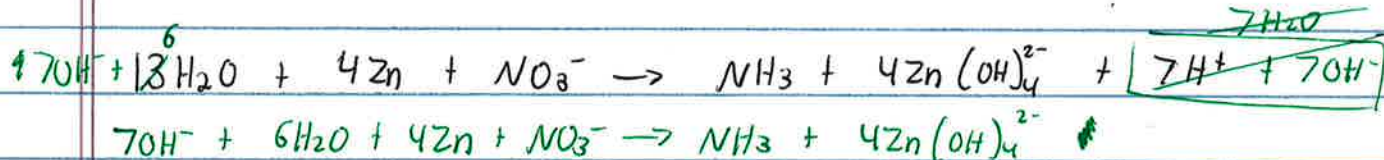
in acid:



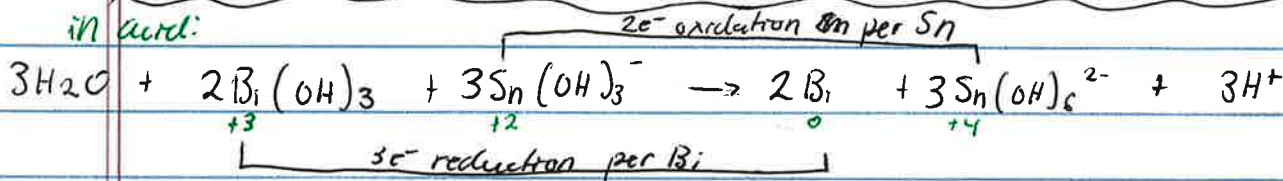
26	H	26	✓
16	O	16	✓
4	Zn	4	✓
1	N	1	✓

-1 charge $-8 + 7 = -1$ ✓

to balance in basic solution, first balance in acid, then add OH^- to both sides (in same number) to cancel any H^+ .

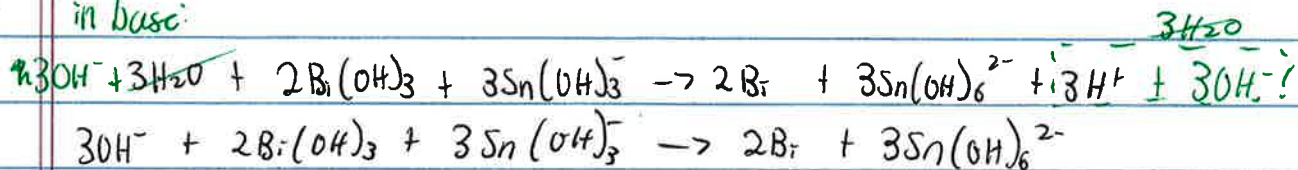


in acid:

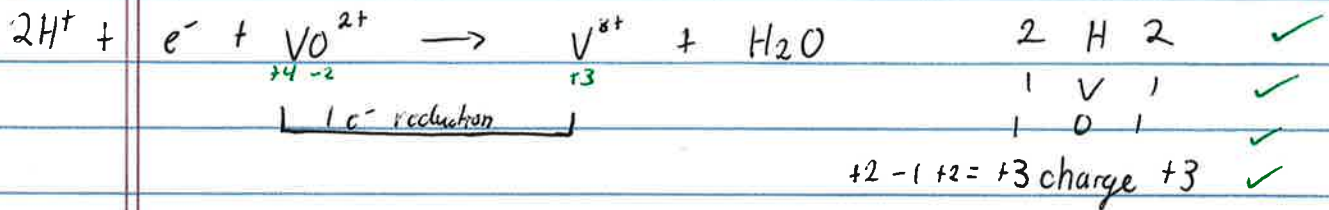


-3 charge $-6 + 3 = -3$ ✓

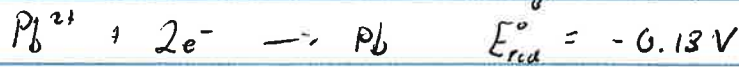
in basic:



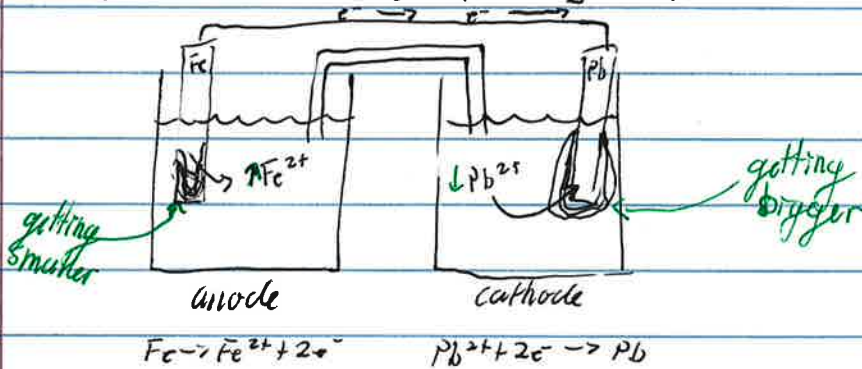
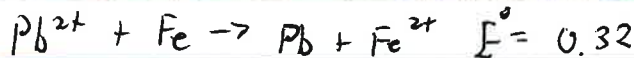
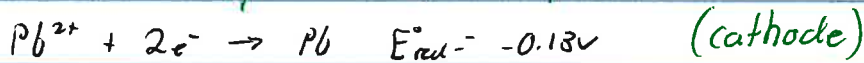
half reaction



std (25°C, 1atm, 1.0M)

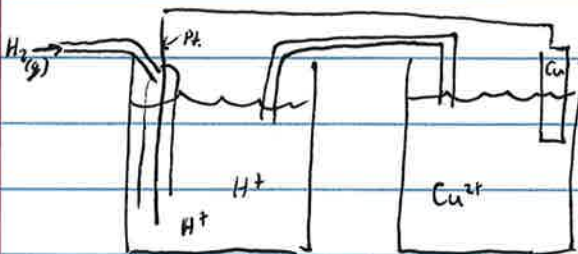
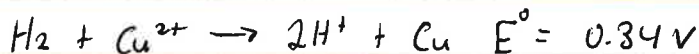
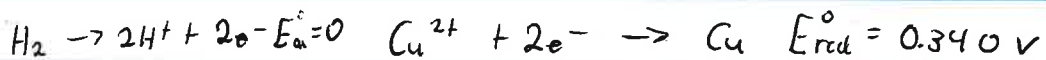
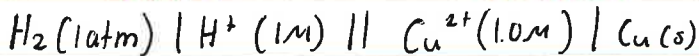


* Galvanic cells are spontaneous ($\Delta G < 0, E > 0$) $\Delta G = -nFE$



cell notation: $Fe | Fe^{2+} (1M) || Pb^{2+} (1M) | Pb$

anode cathode



$$\Delta G = \Delta G^\circ + RT \ln Q$$

$$\frac{-nFE}{-nF} = \frac{-nFE^\circ + RT \ln Q}{-nF}$$

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

$$E = E^\circ - 0.0592 \left(\frac{1}{n}\right) \log Q$$

$$\Delta G = -nFE$$

$$\Delta G^\circ = -nFE^\circ$$

switches from ln to log

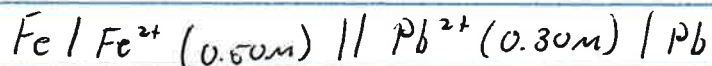
$$(.23) \frac{RT}{F} = .0592$$

Nernst equation

→ at equilibrium $\Delta G = 0$, so and $E = 0$

$$\Delta G^\circ = -RT \ln k$$

$$E^\circ = \frac{0.0592}{n} \log k$$



~~Calculate~~ Sketch the galvanic cell, calculate E° and calculate E . (start with balancing the equation).

Calculate k_c