(11) $\Delta G^\circ = \Delta H^\circ - T\Delta S^\circ$

$\Delta G^\circ = (-103.8) - [298(-0.029)]$

$\Delta G^\circ = -95.158\ kJ$

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

$-95.158 = (-8.314\times10^{-3})(298)(\ln K)$

$\ln K = 38.4077$

$K = 4.79\times10^{16}$

Apr 5-7:32 AM

(13) $Zn^\circ + Cl_2 \rightarrow Zn^{+n}Cl_2$

$1.5\ amps = \frac{1.5\ cal}{sec}$ 25 hrs

$\frac{1\ mole\ Zn}{2\ mole\ e^-}$ $\frac{96500\ cal}{1\ mole\ e^-}$

$\frac{1\ mole\ Zn}{65.38\ g\ Zn}$ ← —g Zn

$$\frac{65.38\ g\ Zn}{1\ mole\ Zn}\left|\frac{1\ mole\ Zn}{2\ mole\ e^-}\right|\frac{1\ mole\ e^-}{96500\ cal}\left|\frac{1.5\ cal}{sec}\right|\frac{60\ sec}{1\ min}\left|\frac{60\ min}{1\ hr}\right|\frac{25\ hr}{}$$

Apr 5-8:07 AM

(18) $Zn_{(s)} + 2H^+ \rightarrow Zn^{+2} + H_{2(g)}$ $E^\circ = +0.763v$

0.001 M 1 M 1 atm

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

$E = 0.763 - \frac{8.314(298)}{2(96,500)} \ln 10^6$

$Zn \rightarrow Zn^{+2} + 2e^- + 0.763$

$2e^- + 2H^+ \rightarrow H_2$ ✗

$Q = \frac{(Zn^{+2})(H_2)}{(H^+)^2} = \frac{(1)(1)}{(0.001)^2} = \frac{1}{(10^{-3})^2} = \frac{1}{10^{-6}} = 10^6$

Apr 5-8:16 AM

(20) $H_2O + CN^- \rightarrow CNO^- + 2H^+ + 2e^-$

$2e^- + 2Fe^{+3} \rightarrow 2Fe^{+2}$

(23) $Al / Al^{+3} // Ni^{+2} / Ni$

$Al \rightarrow Al^{+3} + 3e^-$ LEO $+1.66$

$Ni^{+2} + 2e^- \rightarrow Ni$ RED -0.25

Apr 5-8:26 AM

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(a) -0.854, -0.403

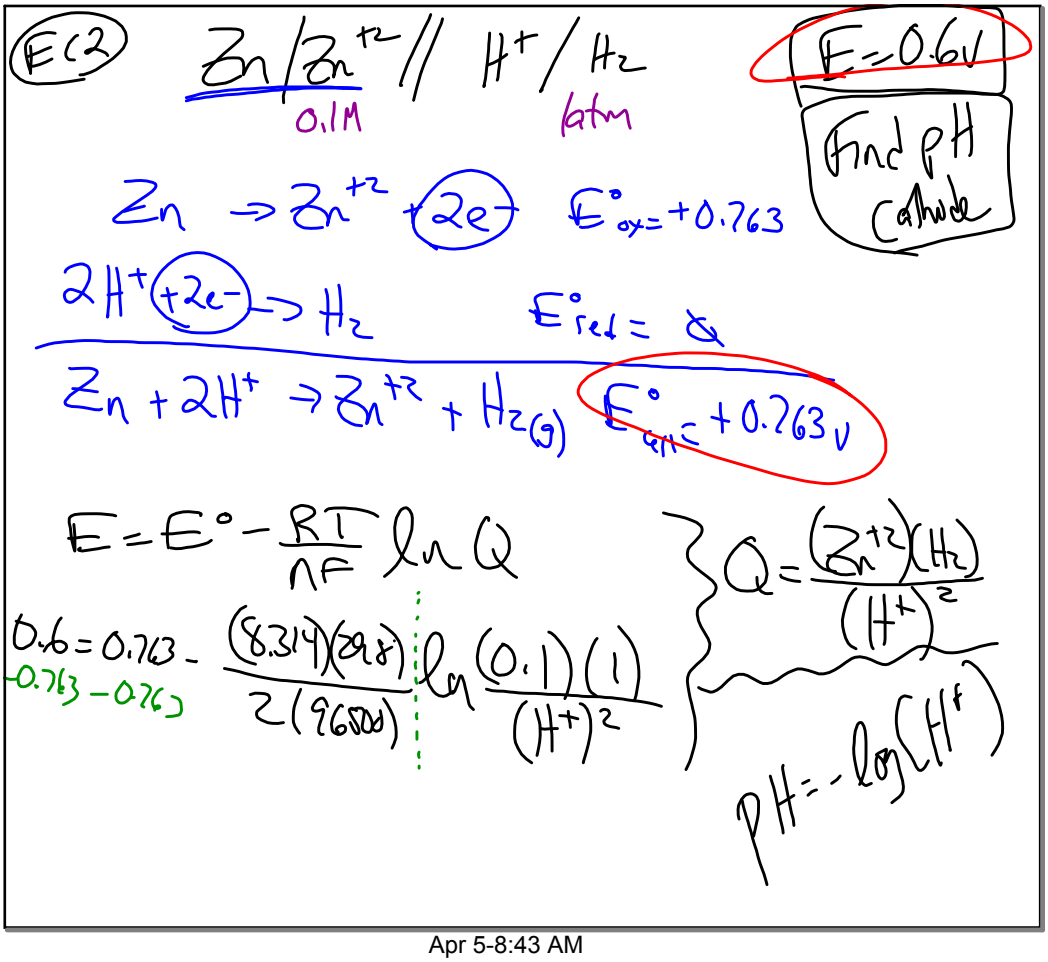
Apr 5-8:35 AM

Ecl

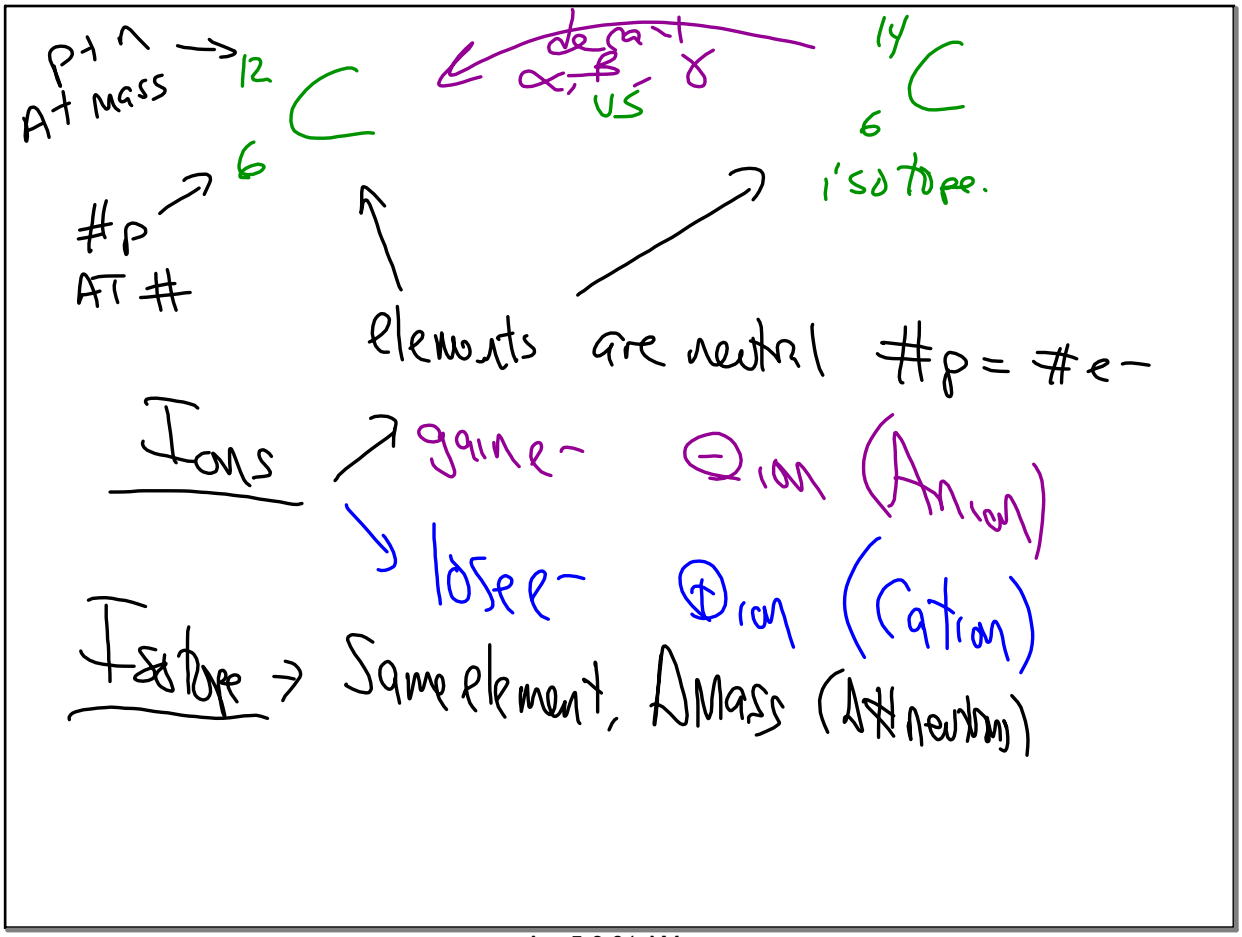
$$E = E^\circ - \frac{RT}{nF} \ln \frac{[Cr^{+3}]}{[Ag^+]^3}$$

$$1.5 = E^\circ - \frac{(8.314)(298)}{3(96500)} \ln \frac{0.3}{(0.1)^3}$$

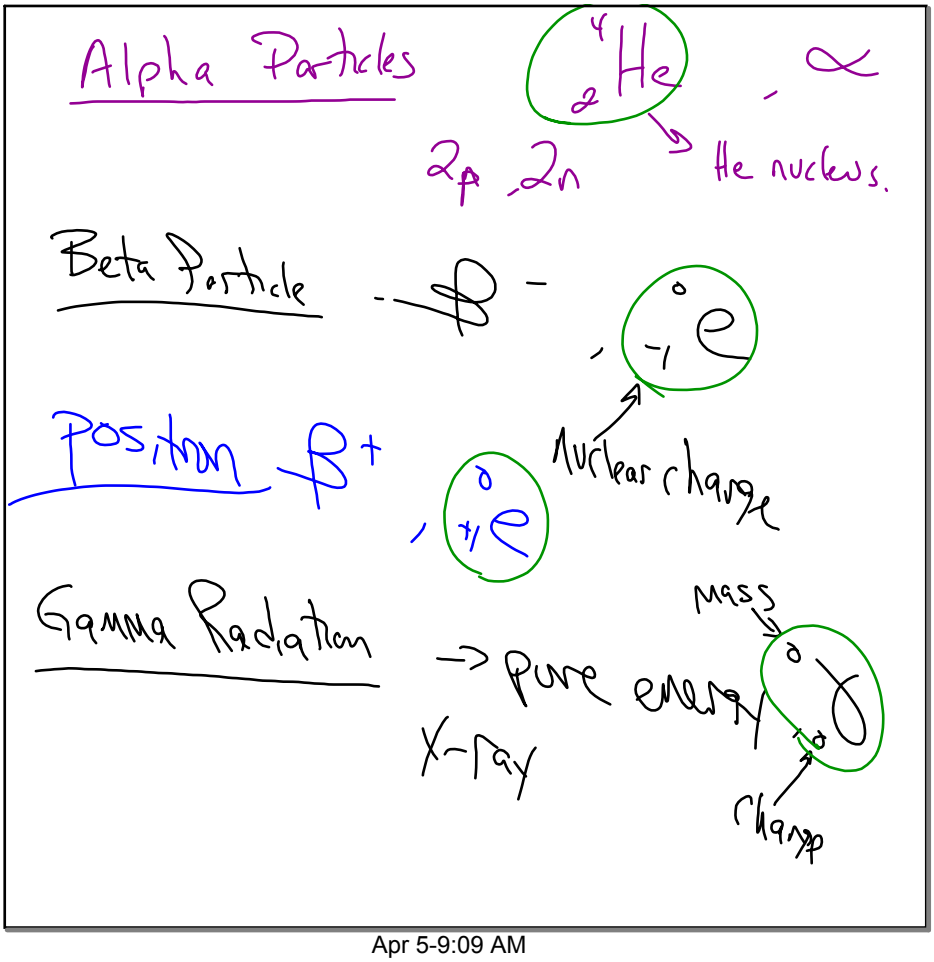
Apr 5-8:40 AM



Apr 5-8:43 AM



Apr 5-9:01 AM


Alpha Particles
^4_2He
α
$2p$ $2n$
He nucleus.
Beta Particle
β^-
$^0_{-1}e$
Nuclear charge
Positron β^+
$^0_{+1}e$
Gamma Radiation
-> pure energy
X-ray
mass
$^0_0\gamma$
charge

Apr 5-9:09 AM