$$F = 96485\ coulomb \bullet mol^{-1}$$

$$q = nF$$

$$q = It$$

$$1\ Ampere = 1\ coulomb \bullet s^{-1}$$

$$E^{\circ}_{cell} = E^{\circ}_{cathode} - E^{\circ}_{anode}$$

$$\Delta G^{\circ} = -nFE^{\circ}_{cell} = -RT \bullet \ln K$$

$$E^{\circ}_{cell} = \left(\frac{RT \bullet \ln K}{n \bullet F}\right)$$

$$E_{cell} = E^{\circ}_{cell} - \left(\frac{0.05916}{n}\right) \bullet \log Q$$

$$\Delta G = -nFE_{cell} = \Delta G^{\circ} + RT \bullet \ln Q$$

$$Q = \frac{[C]^c[D]^d}{[A]^a[B]^b}$$

q is symbol for charge

I is symbol for current

$$Rate = k[A]^x[B]^y[C]^x[D]^w$$

$$Rate = \frac{-1}{a}\frac{d[A]}{dt} = \frac{-1}{b}\frac{d[B]}{dt} = \frac{1}{c}\frac{d[C]}{dt} = \frac{1}{d}\frac{d[D]}{dt}$$

$$\frac{-1}{a}\frac{d[A]}{dt} = k$$

$$[A] = -kt + [A]_0$$

$$t_{1/2} = \frac{[A]_0}{2k}$$

$$\frac{-1}{a}\frac{d[A]}{dt} = k[A]$$

$$[A] = [A]_0 \exp[-kt]$$

$$\ln[A] = -kt + \ln[A]_0$$

$$t_{1/2} = \frac{\ln(2)}{k} = \frac{0.693}{k}$$

$$\frac{-1}{a}\frac{d[A]}{dt} = k[A]^2$$

$$\frac{1}{[A]} = kt + \frac{1}{[A]_0}$$

$$t_{1/2} = \frac{1}{k[A]_0}$$

$$k = A\exp\left(\frac{-E_a}{RT}\right)$$

$$\ln\left(\frac{k_2}{k_1}\right) = \frac{-E_a}{R}\left(\frac{1}{T_2} - \frac{1}{T_1}\right)$$