Fundamental Constants and Conversion Factors

Avogadro's Number	$6.022 \times 10^{23}\ mol^{-1}$
Gas constant R	$0.08206\ L\ atm\ K^{-1}\ mol^{-1}$ or $8.314\ J\ K^{-1}\ mol^{-1}$
Faraday's Constant F	96,485 C/mol

1 K = ^{o}C + 273

1 L·atm = 101.325 J

1 V = 1 J/C

1 cal =4.184 J

Equations

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

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

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

$$-E_a$$

$$\mathrm{pH} = \mathrm{pK_a} + \log\frac{[A^-]}{[HA]}$$

$$\Delta U = q + w$$

$$q = m \times C_s \times \Delta T$$