Equations potentially of interest:

Gas law:
PV=nRT

pH and acid base:
$pH = -log[H^+]$
pH + pOH = 14
$K_w = [H^+] + [OH^-] = 1 * 10^{-14}$
$pH = pK_a + log(C_B/C_A)$

Logarithms:
logA*B = logA + logB
$log_A B = C$ --> $A^C=B$
$alogx = logx^a$
log(A/B) = logA - logB

Algebra:
$ax^2 + bx + c = 0$ <- 2nd degree polynomial for quadratic equation

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}.$$

Equilibrium and free energy:

$K_p = K_c(RT)/\Delta n$
$\Delta G = \Delta H\text{-}T\ \Delta S$
$\Delta G^o{}_{rxn} = \Delta G^o{}_{products} - \Delta G^o{}_{reactants}$
$\Delta G_{rxn} = \Delta G^o{}_{rxn} + RTlnQ$
$\Delta G_{rxn} = RTln(Q/K)$
K_{eq}=products/reactants
$K = e^{-\Delta Go/RT}$
aA + bB --> cC + dD Keq $\frac{[C]^c[D]^d}{[A]^a[B]^b}$
$\Delta G = -T\Delta S_{univ}$
ΔG<O --> spontaneous, reaction moves to right
ΔG>O --> not spontaneous, reaction moves to left
Q>K reactant favored, reaction moves to left
Q<K product favored, reaction moves to right

Works Cited

Coeckelenbergh, Yves. "General Chemistry II." Texas A&M University Corpus Christi. Dec. 2012. Lecture.

Laird, Brian B. *University Chemistry*. 1st ed. N.p.: McGraw-Hill Higher Education, 2008. Print.

Silberberg, Martin S. *Principles of General Chemistry*. Boston: McGraw-Hill Higher Education, 2007. Print.

Concentrations:

$M_1V_1 = M_2V_2$
molarity (M) = moles/liter
molality (m) = moles solute/kg solvent
mass percent = mass solute/mass solution
mole fraction (X_A) = moles solute/moles solution
percent yield = (actual/theoretical)*100
Others:
$\Delta T_b = K_b m_c$
$\Delta T_f = K_f m_c$
$m_c = i*m$
$S = K_B \ln\Omega$

Constants that may be of interest:
K_f = -1.86 °C kg/mol
K_b = 0.512 °C kg/mol
R= 0.08206 L*bar*mol^{-1}*K^{-1}
R= 8.314 J*mol^{-1}*K^{-1}
Avogadro's number = 6.022 * 10^{23}

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