PERIODIC TABLE OF THE ELEMENTS

1A	2A	3B	4B	5B	6B	7B	8B	8B	8B	1B	2B	3A	4A	5A	6A	7A	8A
1 H 1.008																	2 He 4.003
3 Li 6.939	4 Be 9.012											5 B 10.81	6 C 12.01	7 N 14.01	8 O 16.00	9 F 19.00	10 Ne 20.18
11 Na 22.99	12 Mg 24.31											13 Al 26.98	14 Si 28.09	15 P 30.97	16 S 32.07	17 Cl 35.45	18 Ar 39.95
19 K 39.10	20 Ca 40.08	21 Sc 44.96	22 Ti 47.90	23 V 50.94	24 Cr 52.00	25 Mn 54.94	26 Fe 55.85	27 Co 58.93	28 Ni 58.71	29 Cu 63.55	30 Zn 65.39	31 Ga 69.72	32 Ge 72.61	33 As 74.92	34 Se 78.96	35 Br 79.90	36 Kr 83.80
37 Rb 85.47	38 Sr 87.62	39 Y 88.91	40 Zr 91.22	41 Nb 92.91	42 Mo 95.94	43 Tc (99)	44 Ru 101.1	45 Rh 102.9	46 Pd 106.4	47 Ag 107.9	48 Cd 112.4	49 In 114.8	50 Sn 118.7	51 Sb 121.8	52 Te 127.6	53 I 126.9	54 Xe 131.3
55 Cs 132.9	56 Ba 137.3	57 La 138.9	72 Hf 178.5	73 Ta 181.0	74 W 183.8	75 Re 186.2	76 Os 190.2	77 Ir 192.2	78 Pt 195.1	79 Au 197.0	80 Hg 200.6	81 Tl 204.4	82 Pb 207.2	83 Bi 209.0	84 Po (209)	85 At (210)	86 Rn (222)
87 Fr (223)	88 Ra 226.0	89 Ac 227.0	104 Unq (261)	105 Unp (262)	106 Unh (263)	107 Uns (262)	108 Uno (265)	109 Une (266)									

USEFUL INFORMATION:

Constants

$K_w = 1 \times 10^{-14}$, 25 ºC	1 atm = 760 mm Hg	T (°C) + 273 = T (K)
F = 96,485 coulombs/mole e^- = 96,485 J/(V•mole)	R = 0.0821 (L atm)/(mol K) = 8.31×10^{-3} kJ/(mol K)	Room Temperature = 25°C = 298K

Formulae:

$a.x^2+b.x+c = 0$	$x = [-b \pm sqrt(b^2-4.a.c)]/(2.a)$	$P.V = n.R.T$
$pX = -\log X$	$pK_w = pK_a + pK_b$	$pK_w = pH + pOH$
$pH = pK_a + \log([\text{Conjugate Base}]/[\text{Acid}])$	$pOH = pK_b + \log([\text{Conjugate Acid}]/[\text{Base}])$	$c_1 \bullet V_1 = c_2 \bullet V_2$
$\Delta G°_{rxn} = \Delta H°_{rxn} - T\Delta S°_{rxn}$	$\Delta S = q_{rev}/T$	$\Delta S_{sys} = \Delta S_{fus} = \Delta H_{fus}/T_{fus}$
$\Delta S_{surr} = -\Delta H_{sys}/T = -\Delta H_{rxn}/T$	$\Delta S_{sys} = \Delta S_{vap} = \Delta H_{vap}/T_{vap}$	$\Delta S_{uni} = \Delta S_{sys} + S_{sur}$
$\Delta G = \Delta H - T\Delta S$	$\Delta G = -RT \ln K$	$\Delta G = \Delta G° + RT \ln Q$
$E°_{cell} = E°_{cathode} - E°_{anode}$	$E = E° - (0.0257/n) \ln Q$ (at 25°C)	$\Delta G° = -nFE°$
$\ln K_{eq} = nE°/0.0257$ (at 25°C)	Current I (Amperes, A) = electric charge (coulombs, C) / time (sec)	

Compound	ΔG_f^0 (kJ/mol)	ΔH_f^0 (kJ/mol)	S^0 (J/(K.mol)
$SO_2(g)$	-300.13	-296.84	248.21
$H_2S(g)$	-33.56	-20.63	205.79
$O_2(g)$	0	0	205.07
$H_2O(l)$	-237.15	-285.83	69.95
$H_2O(g)$	-228.59	-241.83	188.84