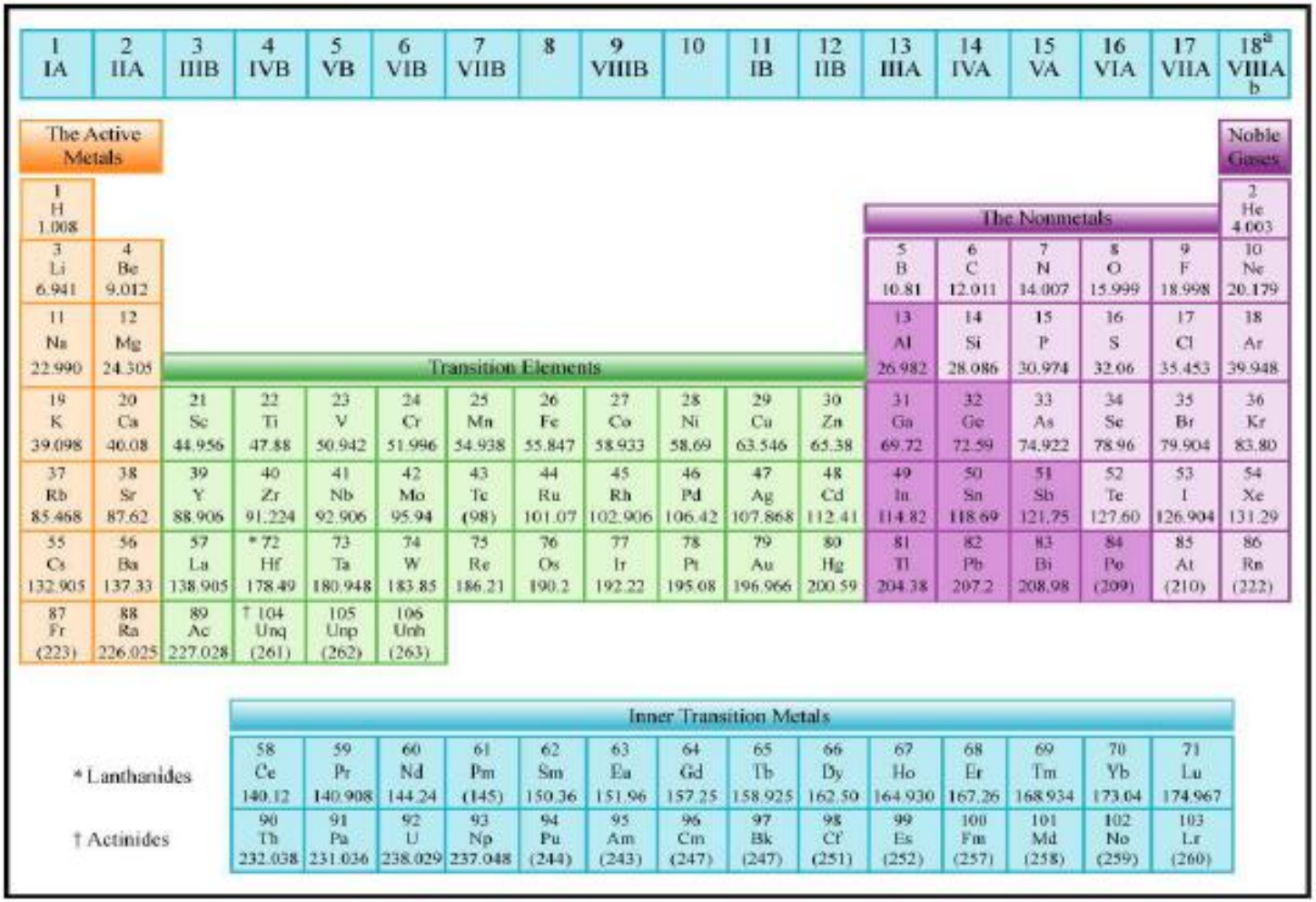
3. Sınav için denklemler ve sabitler

$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$	$pK_a = -\log [K_a]$
$R = 8{,}315\ J\ K^{-1}mol^{-1}$	$pOH = -\log [OH^-]$
$\Im$(Faraday sabiti) = 96,485 C mol^{-1}	$pH=-\log[H_3O^+]$
1V = 1 J/C 1A = 1C/s	$pH \cong pK_a - \log\left(\frac{HA}{A^-}\right)$
$K_{su} = 1{,}00 \times 10^{-14}$, 25°C de	$\Delta E°$(pil)= $E°$(katot) - $E°$(anot)
14,00 = pH + pOH , 25°C de	$RT/\Im = 0{,}025693$ V , 25,00 °C de
$\Delta G° = - RT \ln K$	$\Im/RT = 38{,}921\ V^{-1}$, 25,00 °C de
$\Delta G = \Delta G° + RT \ln Q$	ΔE(pil)= $E°$(pil) – (RT/$\Im$ n) lnQ
$\Delta G° = \Delta H° - T\Delta S°$	$\ln K = (n\Im/RT)\ \Delta E°$
$\ln\left(\frac{K_2}{K_1}\right) = -\left(\frac{\Delta H^0}{R}\right)\left(\frac{1}{T_2} - \frac{1}{T_1}\right)$	$E_3° = [n_1E_1°(\text{ind} - n_2E_2°(\text{yük.}]/n_3$ $\Delta G°_{pil} = -(n)(\Im)\ \Delta E°_{pil}$
$K_{su} = K_aK_b$	$Q = It$

Standart İndirgenme Potansiyelleri (25°C de)

Yarı tepkimeler	$E°$(volt)
$Au^+(aq) + e^- \Rightarrow Au$ (k)	1.69
MnO_4^- (aq) + $8H^+$ (aq) + $5e^- \rightarrow Mn^{2+}$ (aq) + $4H_2O$ (s)	1.51
Ag^+ (aq) + $1e^- \rightarrow$ Ag (k)	0.80
$Cu^{2+}(aq) + 2e^- \Rightarrow Cu(k)$	0.34
AgCl (k) + $1e^- \rightarrow$ Ag (s) + Cl^- (aq)	0.22
Sn^{4+} (aq) + $2e^- \rightarrow Sn^{2+}$ (aq)	0.15
$2H^+(aq) + 2e^- \Rightarrow H_2$	0
$Pb^{2+}(aq) + 2\ e^- \Rightarrow$ Pb (k)	-0.13
$Sn^{2+}(aq) + 2\ e^- \Rightarrow$ Sn (k)	-0.14
$Ni^{2+}(aq) + 2\ e^- \Rightarrow$ Ni (k)	-0.23
$Fe^{2+}(aq) + 2e^- \rightarrow Fe\ (k)$	-0.44
$Cr^{3+}(aq) + 3e^- \Rightarrow Cr\ (k)$	-0.74
$Zn^{2+}(aq) + 2e^- \Rightarrow$ Zn (k)	-0.76


1 IA
2 IIA
3 IIIB
4 IVB
5 VB
6 VIB
7 VIIB
8
9 VIIIB
10
11 IB
12 IIB
13 IIIA
14 IVA
15 VA
16 VIA
17 VIIA
18[a] VIIIA b
The Active Metals
Noble Gases
The Nonmetals
Transition Elements
1 H 1.008
2 He 4.003
3 Li 6.941
4 Be 9.012
5 B 10.81
6 C 12.011
7 N 14.007
8 O 15.999
9 F 18.998
10 Ne 20.179
11 Na 22.990
12 Mg 24.305
13 Al 26.982
14 Si 28.086
15 P 30.974
16 S 32.06
17 Cl 35.453
18 Ar 39.948
19 K 39.098
20 Ca 40.08
21 Sc 44.956
22 Ti 47.88
23 V 50.942
24 Cr 51.996
25 Mn 54.938
26 Fe 55.847
27 Co 58.933
28 Ni 58.69
29 Cu 63.546
30 Zn 65.38
31 Ga 69.72
32 Ge 72.59
33 As 74.922
34 Se 78.96
35 Br 79.904
36 Kr 83.80
37 Rb 85.468
38 Sr 87.62
39 Y 88.906
40 Zr 91.224
41 Nb 92.906
42 Mo 95.94
43 Tc (98)
44 Ru 101.07
45 Rh 102.906
46 Pd 106.42
47 Ag 107.868
48 Cd 112.41
49 In 114.82
50 Sn 118.69
51 Sb 121.75
52 Te 127.60
53 I 126.904
54 Xe 131.29
55 Cs 132.905
56 Ba 137.33
57 La 138.905
* 72 Hf 178.49
73 Ta 180.948
74 W 183.85
75 Re 186.21
76 Os 190.2
77 Ir 192.22
78 Pt 195.08
79 Au 196.966
80 Hg 200.59
81 Tl 204.38
82 Pb 207.2
83 Bi 208.98
84 Po (209)
85 At (210)
86 Rn (222)
87 Fr (223)
88 Ra 226.025
89 Ac 227.028
† 104 Unq (261)
105 Unp (262)
106 Unh (263)
Inner Transition Metals
* Lanthanides
† Actinides
58 Ce 140.12
59 Pr 140.908
60 Nd 144.24
61 Pm (145)
62 Sm 150.36
63 Eu 151.96
64 Gd 157.25
65 Tb 158.925
66 Dy 162.50
67 Ho 164.930
68 Er 167.26
69 Tm 168.934
70 Yb 173.04
71 Lu 174.967
90 Th 232.038
91 Pa 231.036
92 U 238.029
93 Np 237.048
94 Pu (244)
95 Am (243)
96 Cm (247)
97 Bk (247)
98 Cf (251)
99 Es (252)
100 Fm (257)
101 Md (258)
102 No (259)
103 Lr (260)