

43) Na - sodium
Ra - radium
Fe - iron
Mn - manganese
Pb - lead

45) Sn - tin
Pt - platinum
Hg - mercury
Mg - magnesium
K - potassium
Ag - silver

47) metals - on the left

a) Mg, Ti, Au, Bi, Be, Eu, Am

nonmetals - on the right

Si, B, Ar, Rn, Br

b) metalloids - intermediate elements

B, Si, Ge, As, Sb, Te, Po, At

* At is a metal

51)

	Protons	Neutrons	Electrons
${}_{35}^{79}\text{Br}$	35	44	35
${}_{35}^{81}\text{Br}$	35	46	35
${}_{94}^{239}\text{Pu}$	94	145	94
${}_{55}^{133}\text{Cs}$	55	78	55
${}_{1}^3\text{H}$	1	2	1

59)

	Proton	Neutron	Electron	Charge
${}_{92}^{238}\text{U}$	92	146	92	0
${}_{20}^{40}\text{Ca}^{+2}$	20	20	18	+2
${}_{23}^{51}\text{V}^{+3}$	23	28	20	+3

89 Y
39

39

50

39

0

79 BF-
35

35

44

36

-1

31 P-3
15

15

16

18

-3