Isotopes
Chemistry 110 .

1. Fill in the blanks with the correct answers for the following:

Symbol	*# of Protons*	*# of Electrons*	*# of Neutrons*	*Net Charge*
$^{106}_{46}Pd$	*46*	*46*	*60*	*0*
Copper-64	*29*	*29*	*35*	*0*
$^{88}_{38}Sr^{2+}$	*38*	*36*	*50*	*2+*
$^{31}_{15}P^{3-}$	*15*	*18*	*16*	*3-*
$^{64}_{31}Ga^{3+}$	*31*	*28*	*33*	*3+*
$^{35}_{16}S^{2-}$	*16*	*18*	*19*	*2 -*

2. Write complete symbols $\left({}^{A}_{Z}\text{Symbol}\right)$ for the following:

a. An isotope of Chromium that has 3 more neutrons than ^{54}Cr..... $^{57}_{24}Cr$

b. An atom of O that has 4 more subatomic particles than ^{13}C..... $^{15}_{8}O$

c. An atom of Silver which has the same number of electrons, protons, and neutrons..... $^{94}_{47}Ag$

d. An atom with 6 more neutrons and 3 more protons than ^{37}Cl..... $^{46}_{20}Ca$

e. An isotope of Bromine that contains the same number of neutrons as Arsenic-74 ..... $^{76}_{35}Br$

f. An isotope of Manganese that contains the same number of subatomic particles as Cobalt-60..... $^{62}_{25}Mn$

3. Fill in the blanks:

Isotope	Number of protons	Number of neutrons	Electron configuration Starting with the 1s subshell
Beryllium-9	4	5	$1s^2 2s^2$
Aluminum-26	13	13	$1s^2 2s^2 2p^6 3s^2 3p^1$
Sodium-23	11	12	$1s^2 2s^2 2p^6 3s^1$
Tin-101	50	51	$1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^{10} 4p^6 5s^2 4d^{10} 5p^2$
Rhodium-107	45	62	$1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^{10} 4p^6 5s^2 4d^7$
K^+ (Mass number = 43)	19	24	$1s^2 2s^2 2p^6 3s^2 3p^6$
Cl^- (Mass number = 40)	17	23	$1s^2 2s^2 2p^6 3s^2 3p^6$
P^{3-} (Mass number = 31)	15	16	$1s^2 2s^2 2p^6 3s^2 3p^6$
Mg^{+2} (Mass number = 26)	12	14	$1s^2 2s^2 2p^6$