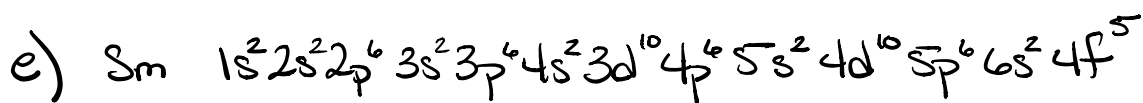
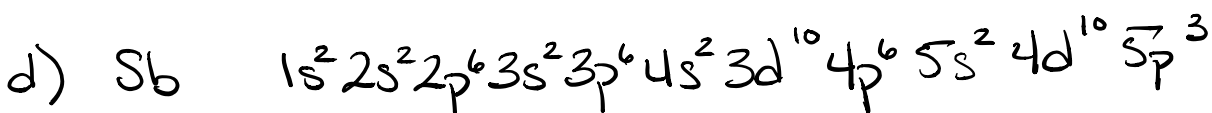
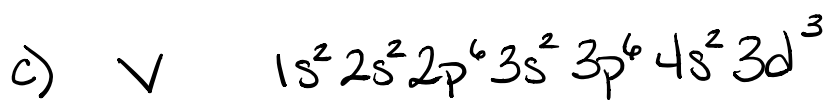
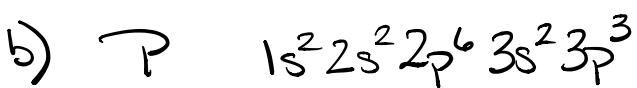
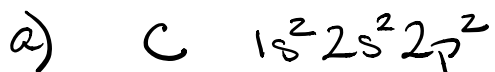


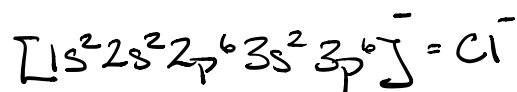
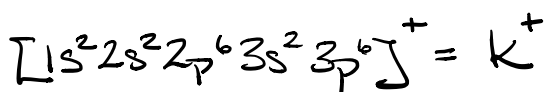
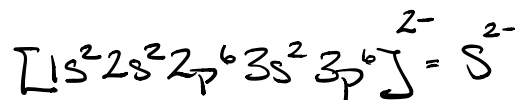
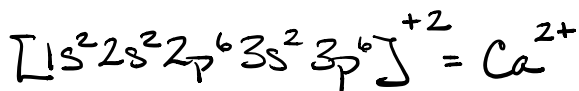
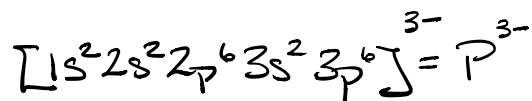
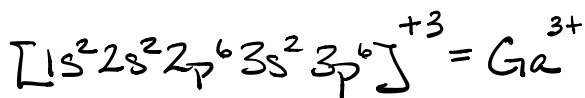
Chapter 3 Homework Answer Key

48) Give the electronic configuration of each of the following

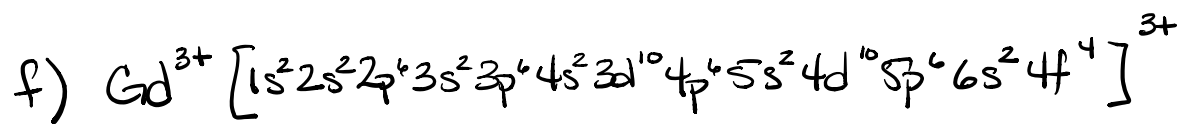
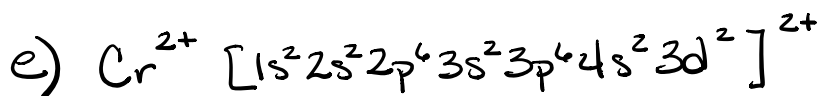
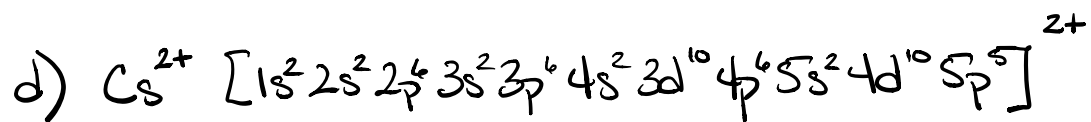
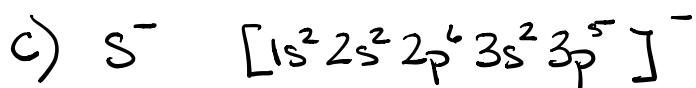
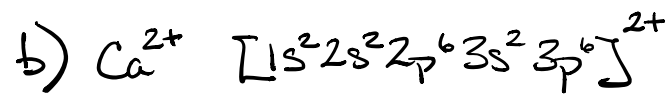
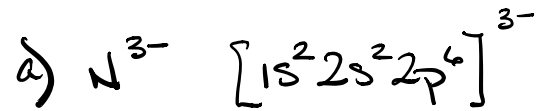


51) What additional info do we need to answer the question "which ion has the electronic configuration $1s^2 2s^2 2p^6 3s^2 3p^6$ "?

Specifically we need to know the charge



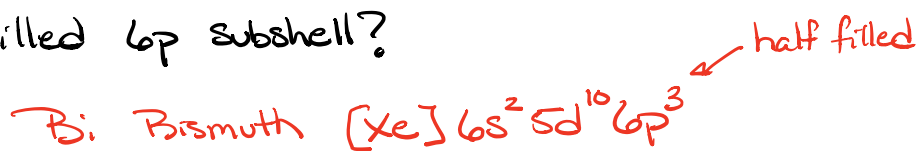
54) Give the electronic configuration of the following ions.



56) Which atom has the electron configuration $1s^2 2s^2 2p^6 3s^2 3p^6 3d^7 4s^2$?

Co

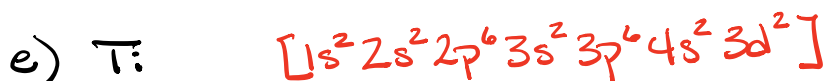
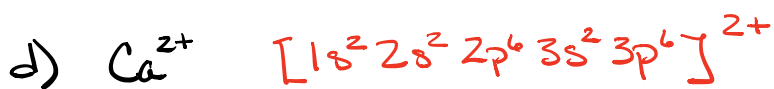
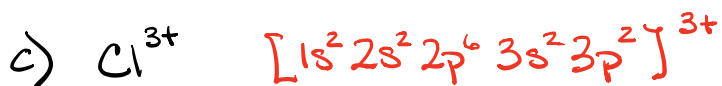
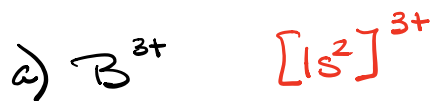
b0) Which atom would be expected to have a half-filled 6p subshell?



b1) Which atom would be expected to have a half-filled 4s subshell?



b4) Write the electronic configurations for the following atoms or ions:



87) Using the periodic table, classify each of the following elements as a metal or a nonmetal, and then further classify each as a main-group element, transition metal, or inner transition metal:

a) Uranium U metal, Transition metal

b) Bromine Br nonmetal, Main-group

c) Strontium Sr metal, main-group

d) Neon Ne nonmetal, Main-group

e) Gold Au metal, Transition metal

f) Americium Am metal, Inner Transition metal

g) Rhodium Rh metal, Transition metal

h) Sulfur S nonmetal, main-group

i) Carbon C non metal, Main-group

j) Potassium K metal, Main-group

89) Using the periodic table identify the lightest member of each of the following groups:

a) Noble Gases Helium He

b) Alkaline Earth Metals Beryllium Be

c) Alkali metals Hydrogen, H

d) Chalcogens This is the first time I've seen this name in 20 years. I've learned something new. This is group 6A
Oxygen, O

91) Use the periodic table to give the name and symbol for each of the following elements:

a) The noble gas in the same period as germanium

Krypton Kr

b) The alkaline earth metal in the same period as selenium

Calcium Ca

c) The halogen in the same period as lithium

Neon Ne

d) The chalcogen in the same period as cadmium

Tellurium Te

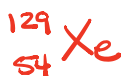
93) Write a symbol for each of the following neutral isotopes. Include the atomic number and mass number for each.

a) The alkali metal with 11 protons and a mass number of 23



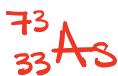
$$11 \text{ protons} = \text{Na}$$

b) The noble gas element with 75 neutrons in its nucleus and 54 electrons in the neutral atom



$$\begin{aligned} \text{neutral } e^{-} &= p^{+} \\ 54e^{-} &= 54p^{+} = \text{Xe} \end{aligned}$$

c) The isotope with 33 protons and 40 neutrons in its nucleus



$$33p^{+} = \text{As}$$

d) The alkaline earth metal with 88 electrons and 138 neutrons



$$88e^{-} = 88p^{+} = \text{Ra}$$

95) Using the Periodic Table, predict whether the following chlorides are ionic or covalent:

Look for the metals. metal = ionic

KCl Ionic

NI₃ Covalent

ICI Covalent

MgCl₂ Ionic

PCl₅ Covalent

CCl₄ Covalent

97) For each of the following compounds, state whether it is ionic or covalent. If it is ionic, write the symbols for the ions involved:

a) NF_3 Covalent

b) BaO Ionic Ba^{2+} O^{2-}
Barium oxide

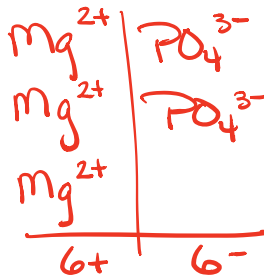
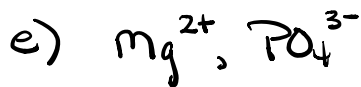
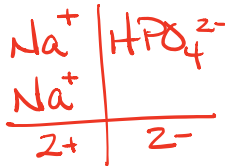
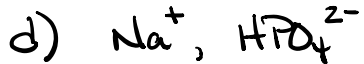
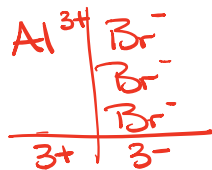
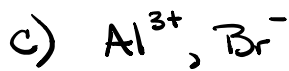
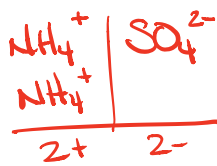
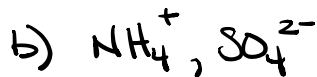
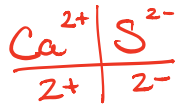
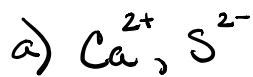
c) $(\text{NH}_4)_2\text{CO}_3$ Ionic NH_4^+ CO_3^{2-}
ammonium carbonate

d) $\text{Sr}(\text{H}_2\text{PO}_4)_2$ Ionic Sr^{2+} H_2PO_4^-
strontium dihydrogen phosphate

e) IBr Covalent

f) Na_2O Ionic Na^+ O^{2-}
sodium oxide

99) For each of the following pairs of ions, write the symbol for the formula of the compound they will form.



100) For each of the following pairs of ions, write the symbol for the formula of the compound they will form.

