Warm Up

Determine the number of protons & neutrons found in the following isotopes:

a. $^{54}_{25}Mn$ b) tungsten-185 c) $^{227}_{87}Fr$

P 25
n 29

P=74
n=111

P=87
n=140

Sep 18-8:20 AM

Check Homework - #23,24

17-24

18. $^{12}_{6}C$ $^{19}_{9}F$ $^{9}_{4}Be$

19. $^{16}_{8}O$, $^{17}_{8}O$, $^{18}_{8}O$

21. Boron-10 > 10.81 amu
Boron-11

Feb 9-12:56 PM

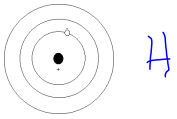
Homework - Isotopes Worksheet

Isotope Name	Atomic Number	Mass Number	Symbol	# of Protons	# of Neutrons
carbon - 14					
hydrogen - 2					
lawrencium - 257					

Feb 11-7:56 AM

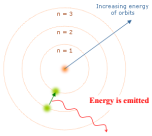
Bohr Theory

1. Each electron has a fixed quantity of energy related to the circular orbit in which the electron is found.



2. Electrons cannot exist between orbits, but they can move to unfilled orbits if a quantum of energy is absorbed or released.

3. The higher the energy level of the electron, the further it is from the nucleus.



4. The maximum number of electrons in the first three energy levels is 2,8, and 8.

5. An atom with a maximum number of electrons in its outermost energy level (filled) is stable and therefore unreactive.

GROUPS occur in the Periodic Table because:
elements with the same number of electrons in the outer shell have similar chemical properties.

PERIODS occur in the Periodic Table as one shell becomes filled and electrons have to move to a new shell (energy level)

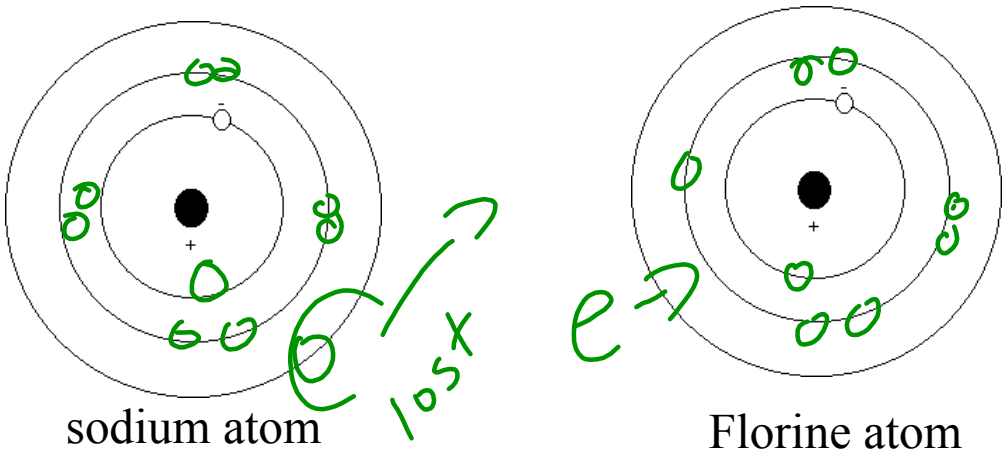
valence electrons - electrons in the highest energy level.
⇒for representative elements, the number of valence electrons is equal to the last digit of the group number

http://www.webelements.com/

Noble Gases (Group 18) are not reactive since their outer energy level is filled and therefore they do not need to gain or lose electrons to other atoms (atoms always try to gain or lose electrons to reach a complete stable outer energy level)

Sep 16-1:36 PM

Electron Energy Diagrams



Sep 16-2:40 PM

Ions

Ion - an atom which takes on an *electrical charge* Ex. Na^+ or Cl^-

Cations - are usually formed from metallic atoms that lose electrons.
Ex. Ag^+
- **positively** charged ions
- use the full english name of the atom from which it was formed followed by the word ' ion'

Ex. silver ion

Anions - are usually formed from nonmetallic atoms which have gained an electron.
Ex. F^-
- **negatively** charged ions
- names of anions are formed by using the english name of the nonmetallic atom as a stem and adding the suffix -ide followed by the word ion.

Ex. fluoride ion

Feb 15-11:20 AM

Name	Symbol	Protons	Electrons	Ionic Charge
		26		2+
		24	21	-
		47		0
	Se^{2-}			1-

-2

Feb 14-10:25 AM

Name	Symbol	Protons	Electrons	Ionic Charge
Iron	Fe^{2+}	26	24	2+
Chromium	Cr^{3+}	24	21	3+
Silver	Ag	47	47	0
Selenium	Se^{2-}	34	36	2-

-2

Feb 14-10:25 AM

Name	Symbol	Protons	Electrons	Ionic Charge
			18	2-
		52	52	
	Ba^{2+}			

Sep 16-7:33 AM

Today's Assignment

Ions Worksheet

atoms_vs_ions_wksht.pdf

If not completed in class finish for homewor

#30-33

Sep 16-2:35 PM

$16 \times 0.9976 =$

$17 \times 0.00037 =$

$18 \times 0.00204 = +$

16.005

oxygen-18

Sep 28-11:40 AM

Ions

Cation Anion

Ca 2+ p - 20 n - 20 e - 18

O 2- p 8 n 8 e 10

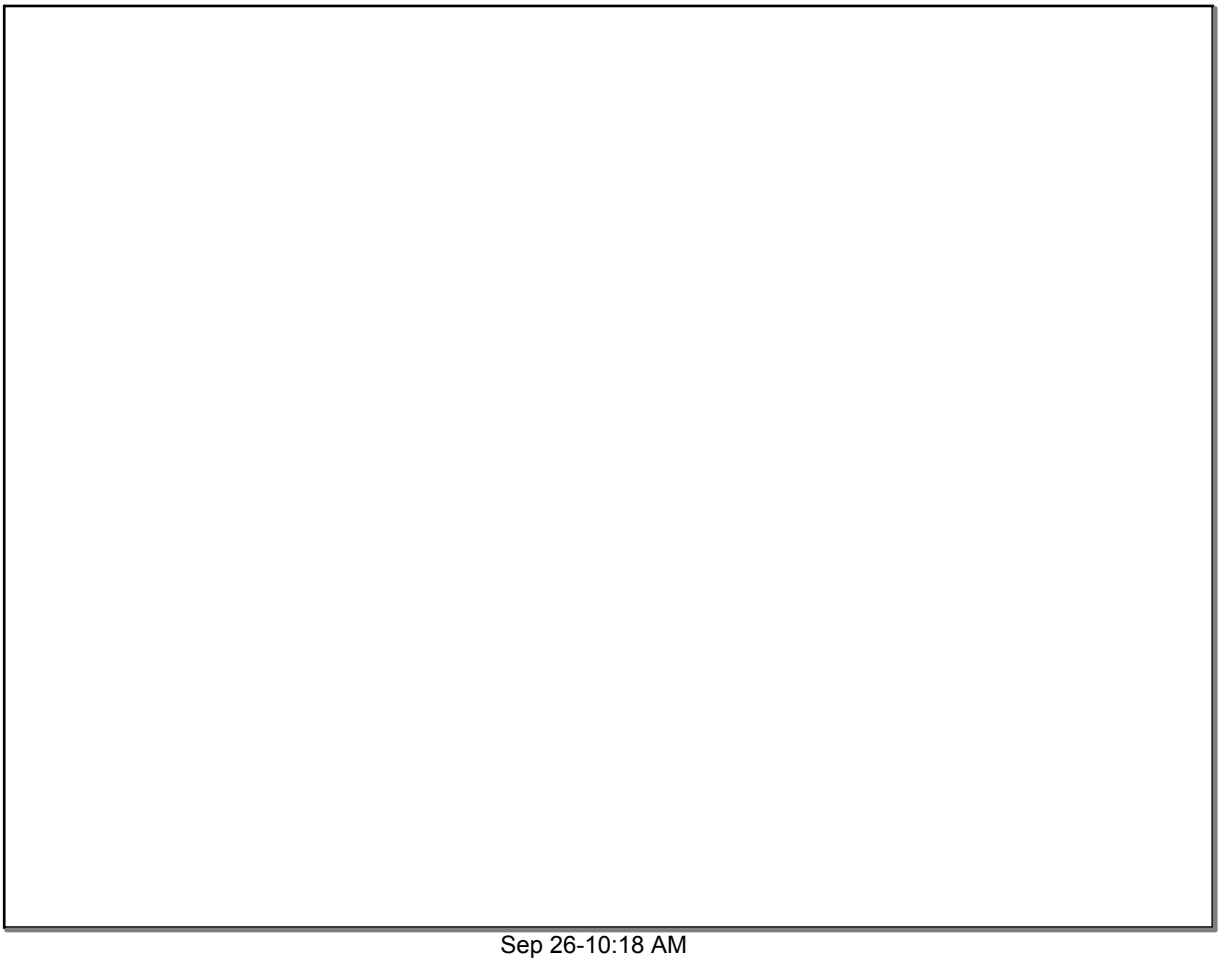
Au +1 p 79 n 118 e 78

GOLD 197 79 Au

S 2- p 16 n 16 e 18

Au x 3 p 79 n 118 e 76

Sep 28-11:44 AM



Sep 26-10:18 AM

Attachments

atoms_vs_ions_wksht.pdf