

# Warm Up

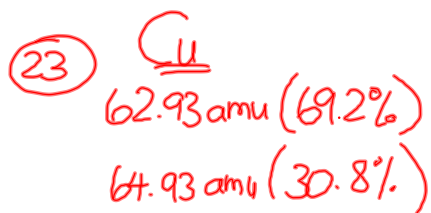
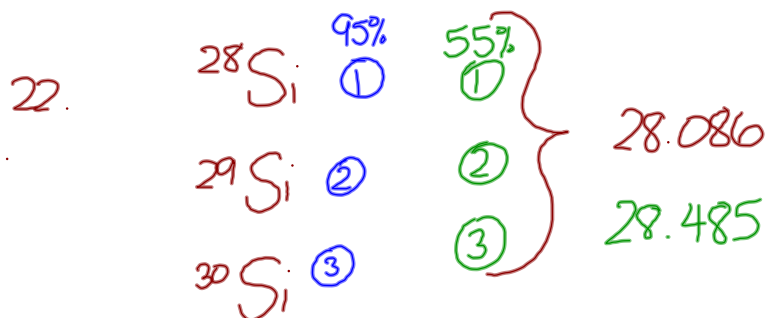
1 a.m.u.  
+

1 a.m.u.

0 a.m.u.  
-

Isotope	protons	neutrons	electrons
aluminum - 26	13	13	13
osmium - 167	76	91	76
neon - 19	10	9	10
polonium - 199	84	115	84
cerium - 124	58	66	58

Check Homework - #21-24  
Isotope worksheet

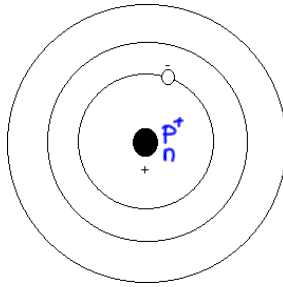


$$(62.93)(0.692) + (64.93)(0.308)$$

$$= \boxed{63.54}$$

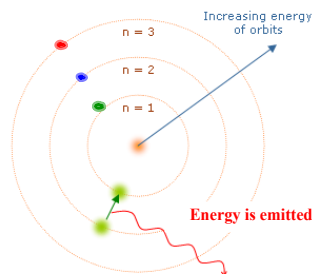
# Bohr Theory

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 (*noble gases*).

GROUPS occur in the Periodic Table because:

elements with the same number of electrons in the outer shell have similar chemical properties.

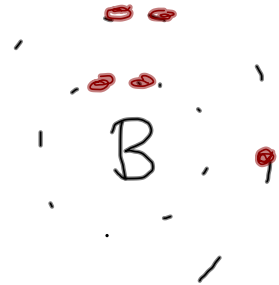
PERIODS occur in the Periodic Table as one shell becomes filled and electrons have to move to a new shell (energy level)

valence electrons - electrons in the highest energy level.

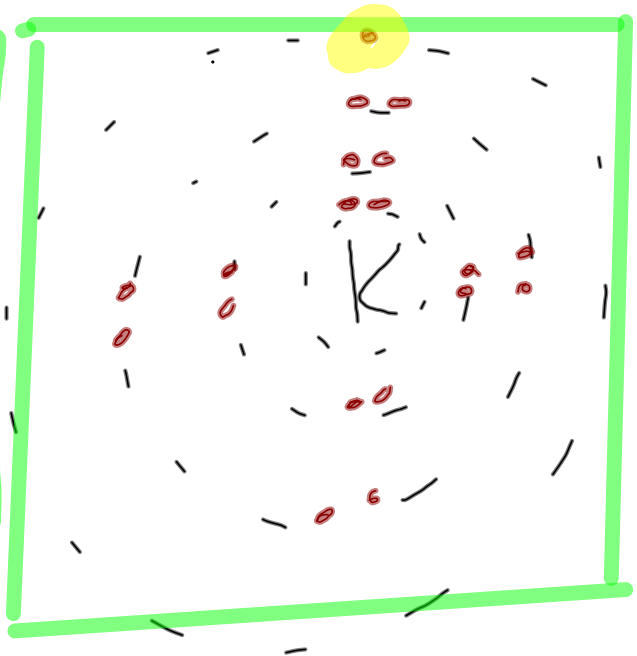
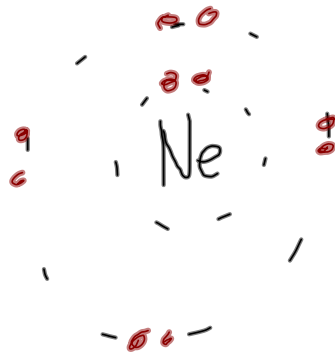
⇒ for representative elements, the number of valence electrons is equal to the last digit of the group number

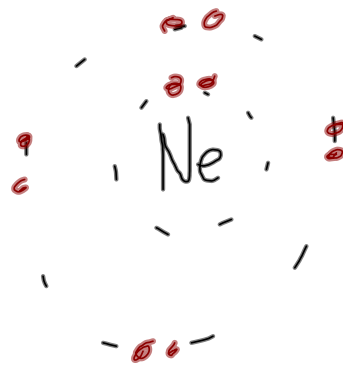
<http://www.webelements.com/>

**Nobel 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)



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## Electron Energy Diagrams

