April 15, 2019

- Review Periodic Table/Bohr Diagrams
- Ions/Bohr Diagrams of Ions

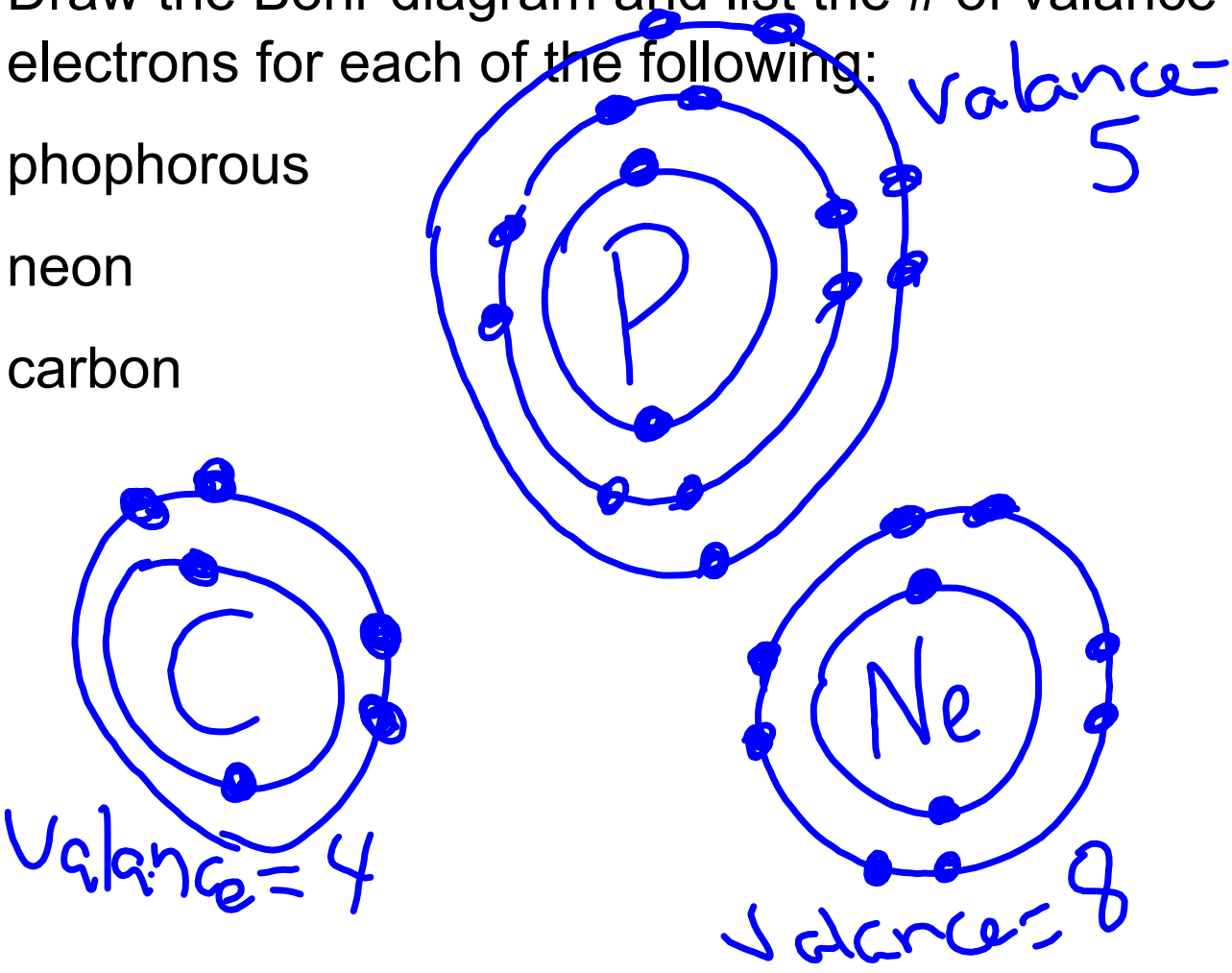
Warm-Up

Draw the Bohr diagram and list the # of valance electrons for each of the following:

phophorous

neon

carbon



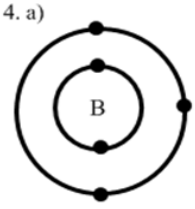
Sep 5-3:01 PM

answers pg 187 #2,3,4

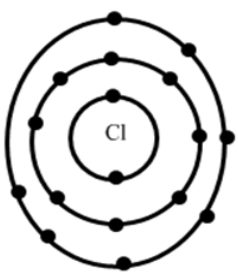
2. Hydrogen is in the metallic area of the periodic table, but has non-metallic properties.

element	orbit 1	orbit 2	orbit 3
Hydrogen	1		
Helium	2		
lithium	2	1	
beryllium	2	2	
boron	2	3	
carbon	2	4	
nitrogen	2	5	
oxygen	2	6	
fluorine	2	7	
neon	2	8	
sodium	2	8	1
magnesium	2	8	2
aluminum	2	8	3
silicon	2	8	4
chlorine	2	8	5
sulphur	2	8	6
chlorine	2	8	7
argon	2	8	8
potassium	2	8	8
calcium	2	8	8

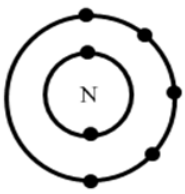
4. a)



b)



c)



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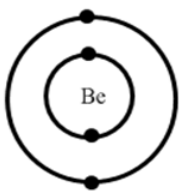
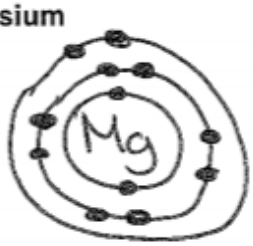


Oct 18-11:29 AM

Answers Bohr Diagram Worksheet

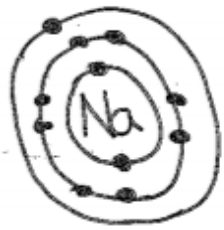
valance electrons

1. **Magnesium**



Valance electrons = 2

2. **Sodium**



Valance electrons = 1

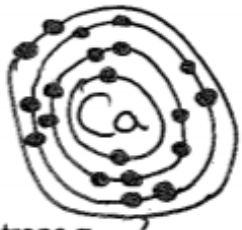
3. **Sulfur**

Valance electrons = 6

4. **Fluorine**

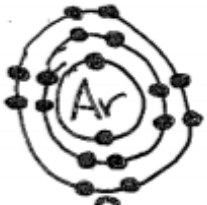
Valance electrons = 7

5. **Calcium**



Valance electrons = 2

6. **Argon**



Valance electrons = 8

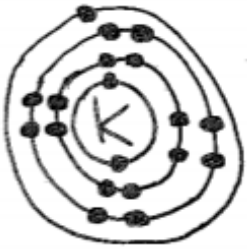
7. **Oxygen**

Valance electrons = 6

8. **Lithium**

Valance electrons = 1

9. **potassium**

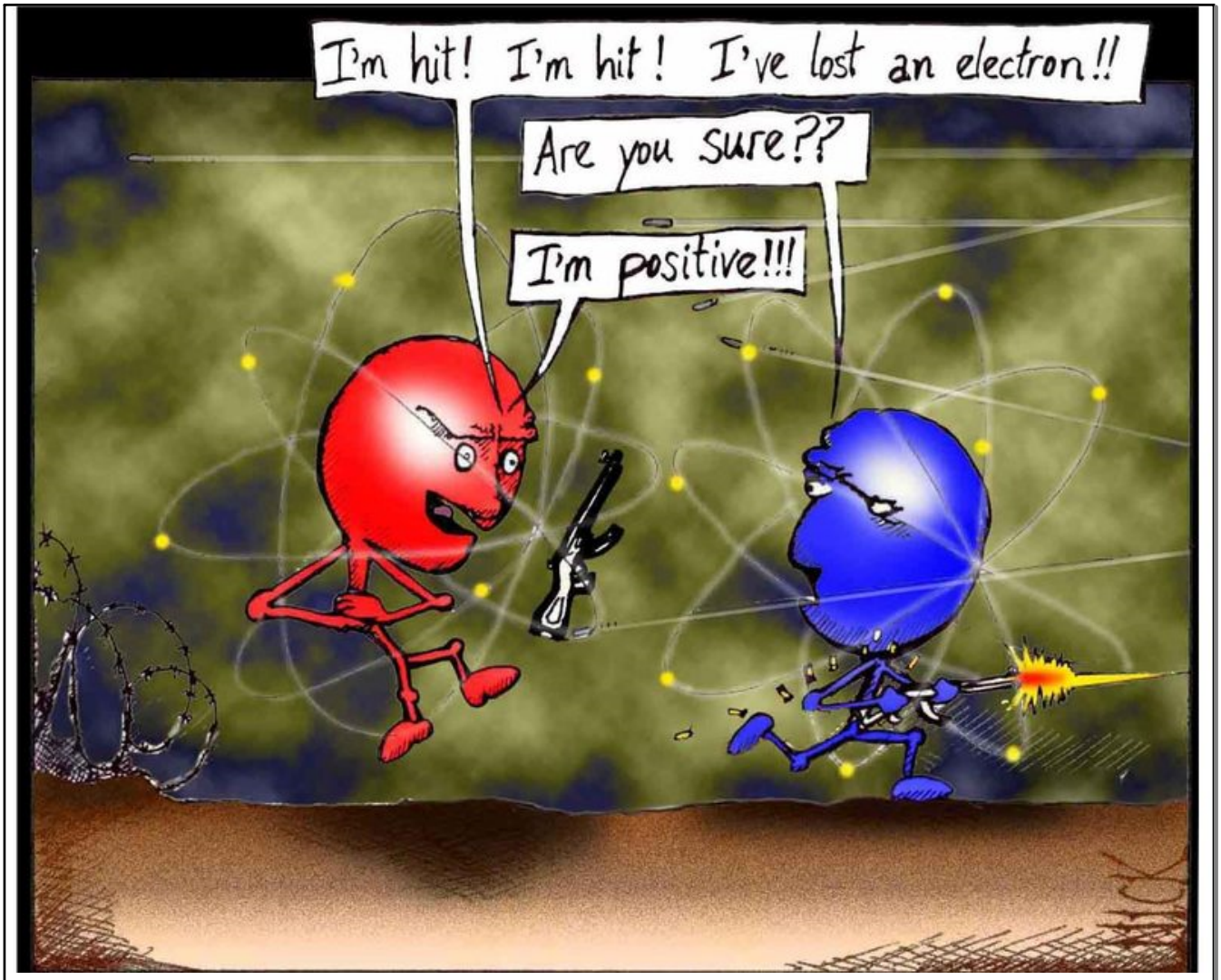


Valance electrons = 1

10. **Helium**

Valance electrons = 2

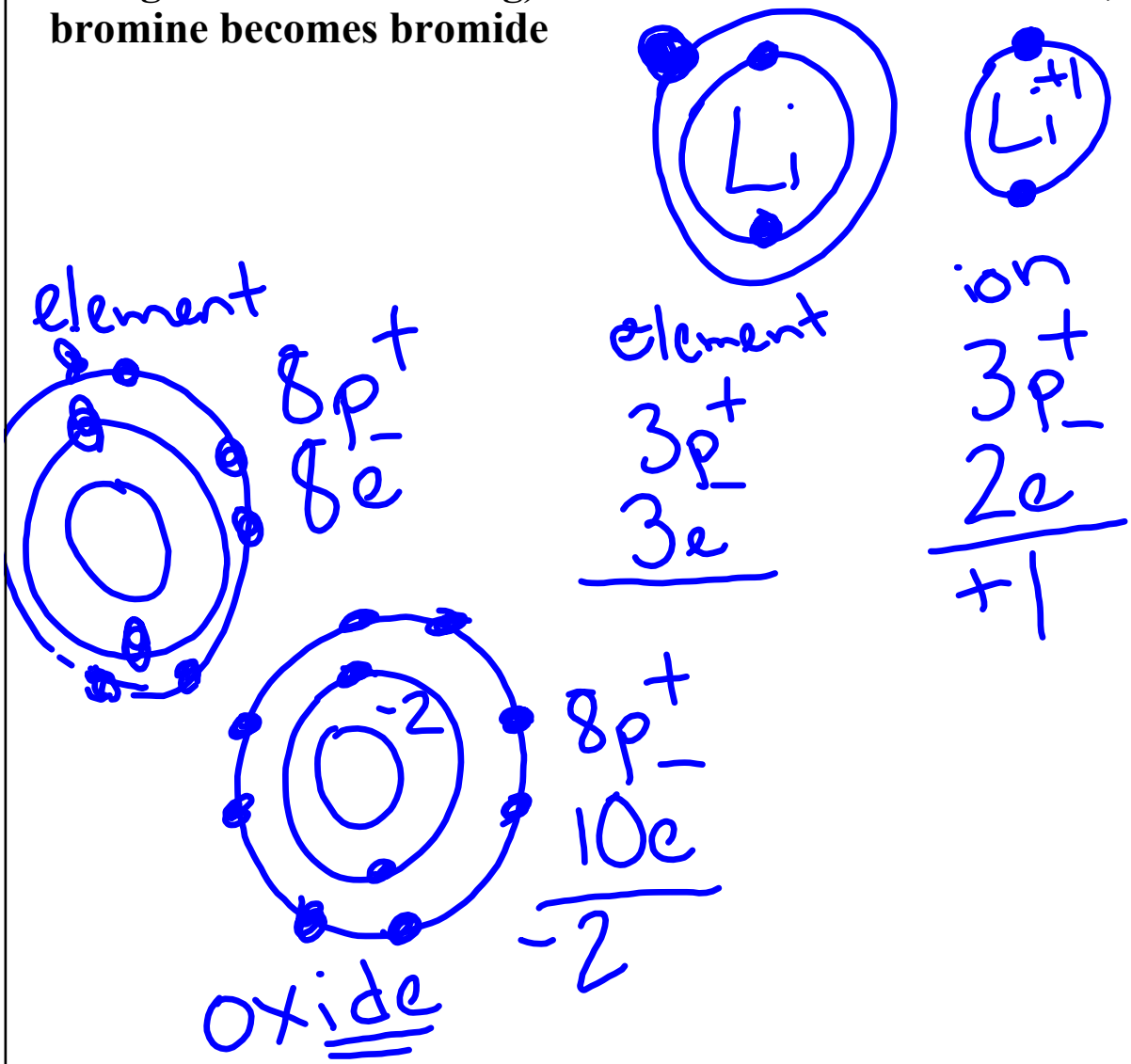
Nov 12-9:55 AM



Oct 17-12:12 PM

Ions

- when an elements valance is full it is stable and happy
- elements are willing to give up or gain e^- in order to have the appearance of a filled outermost orbit (stable)
- when e^- are gained or lost, an atom is then called an **ion**
- a positively charged ion is called a **cation (name stays the same)**
- a negatively charged ion is called an **anion (its name changes to an -ide ending) i.e. flourine becomes flouride , bromine becomes bromide**



Sep 7-6:42 PM

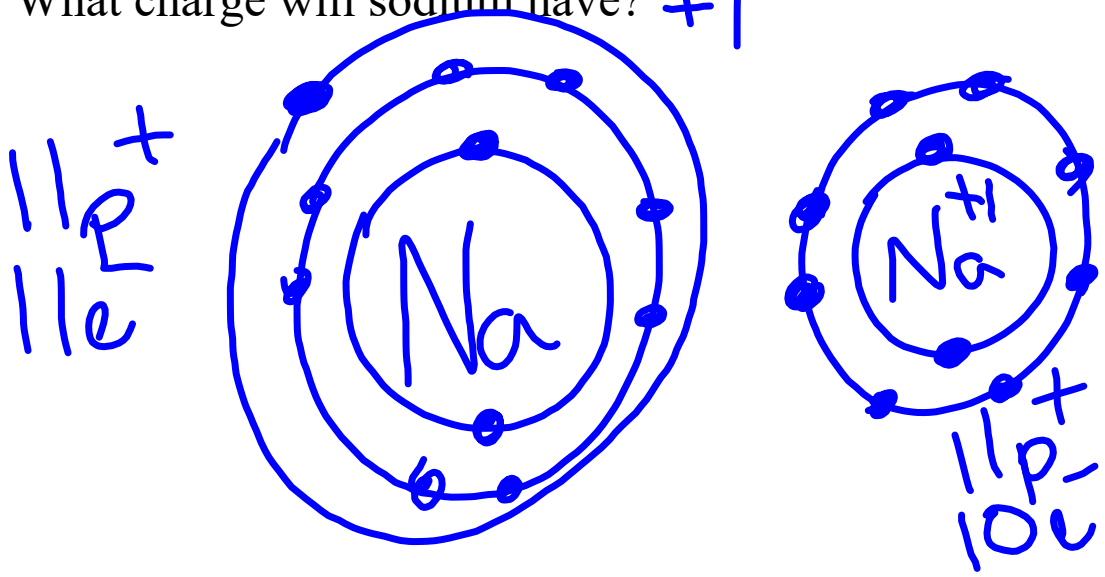
Why do Ions form?

Elements want to have their outer orbits (valence) full. They will gain or lose electrons from their valance (outer most orbit) to do this.

Draw the bohr diagram for sodium in your notebook.

Answer the following questions:

1. Is its outer orbit (valence) full? NO
2. How many electrons are missing in order to make it full? 7
3. Do you think sodium will gain or lose electrons? lose
4. What charge will sodium have? +1



Oct 15-7:20 PM

Charged Atoms

Because sodium loses an electron to have a full valance. It still has 11 protons, but only 10 electrons therefore the sodium ion has a charge of +1.

It has one more proton than electron.

Anytime you lose electrons the ion will have a positive charge.

Anytime you gain electrons the ion will have a negative charge.

Bohr Diagram of Stable Ions

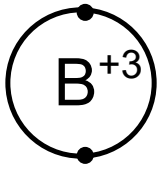
Look at the group # and determine how many valence electrons there are (Boron is in group 13 so it has 3 valence electrons)

Decide if the Atom is going to lose or gain electrons in order to become stable i.e. if it has 3 in its valence and the valence holds 8 it will lose 3)

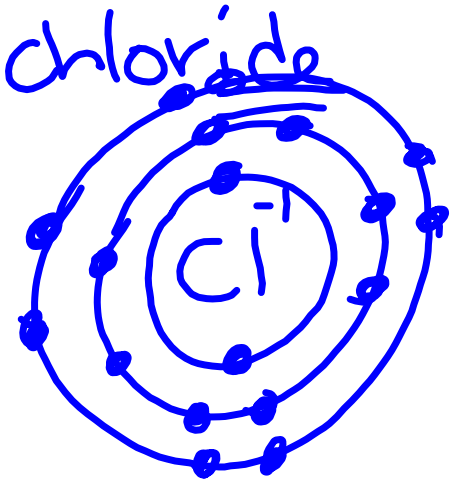
Draw the Bohr diagram showing the extra or lost electrons (only 1 orbit with 2 electrons in it)

In the center put the ionic symbol (the symbol of the element showing how many electrons it has gained or lost i.e. Li^{+1},M^{-2} etc

Example: Boron



ion



Nov 21-4:26 PM

pg 187 #5,6

Oct 14-2:23 PM

Attachments

S10 answers pg 187 #1-4.doc

answers pg 187 #1,2,4.doc