

- 1. Octet Rule C  Elements found on the right side of the periodic table.
- 2. Metals B  Elements found on the left side of the periodic table.
- 3. Valence electrons D  Says that atoms tend to be more stable with eight valence electrons.
- 4. Non-metals A  Electrons in the outermost electron level. Involved in chemical bonding.

How many valence electrons?

Calcium (Ca) <u>2</u>	Hydrogen (H) <u>1</u>
Potassium (P) <u>1</u>	Helium (He) <u>2</u>
Oxygen (O) <u>6</u>	Aluminum (Al) <u>3</u>
Argon (Ar) <u>8</u>	Sodium (Na) <u>1</u>
Boron (B) <u>3</u>	Nitrogen (N) <u>5</u>

Metal or Non-metal?

<u>M</u> Aluminum (Al)	<u>M</u> Iron (Fe)
<u>N</u> Oxygen (O)	<u>N</u> Fluorine (F)
<u>M</u> Gold (Au)	<u>M</u> Tin (Sn)
<u>N</u> Nitrogen (N)	<u>M</u> Lithium (Li)
<del><u>N</u></del> Bromine (Br)	<u>M</u> Chromium (Cr)
<del><u>N</u></del> Krypton (Kr)	<u>M</u> Lead (Pb)

Connect the element on the left with the element on the right that has similar reactivity.

Chlorine	<del>Beryllium</del>	Elements with the same # of <u>Valence</u> electrons have the same reactivity.
Phosphorous	<del>Potassium</del>	
Magnesium	<del>Iodine</del>	
Sodium	<del>Aluminum</del>	
Boron	<del>Oxygen</del>	
Sulfur	<del>Nitrogen</del>	

7 protons and 10 electrons. *Neutral atom or ion?*  
 15 protons and 15 electrons. *Neutral atom or ion?*  
 35 protons and 37 electrons. *Neutral atom or ion?*

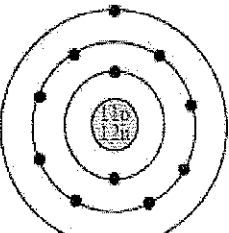
Give the element abbreviation and charge.  
 5 protons and 2 electrons: Element: B Charge: +3  
 16 protons and 18 electrons: Element: S Charge: -2  
 35 protons and 36 electrons: Element: Br Charge: -1

Are these elements isotopes of one another?  
 Element A: 12 protons; 11 electrons; 13 neutrons. No  
 Element B: 13 protons; 12 electrons; 13 neutrons.

Are these elements isotopes of one another?  
 Element A: 14 protons; 15 electrons; 13 neutrons. Yes  
 Element B: 14 protons; 14 electrons; 15 neutrons.


Are these elements isotopes of one another?  
 Element A: 12 protons; 11 electrons; 13 neutrons. No  
 Element B: 12 protons; 12 electrons; 13 neutrons.

Are these elements isotopes of one another?  
 Element A: 18 protons; 18 electrons; 18 neutrons. Yes  
 Element B: 18 protons; 18 electrons; 19 neutrons.



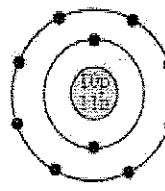
Element: Sodium Na  
 # of neutrons: 12  
 Mass #: 23  
 # of electrons: 11  
 # of valence electrons: 1  
 It is an ion? No

---



Element: Helium He  
 # of neutrons: 2  
 Mass #: 4  
 # of electrons: 2  
 # of valence electrons: 2  
 It is an ion? No

---



Element: Neon  
 # of neutrons: 11  
 Mass #: 21  
 # of electrons: 10  
 # of valence electrons: 8  
 It is an ion? No

Sulfur (S) is in row 3. Sulfur has 2 complete electron levels and 6 valence electrons in level 3.

Magnesium (Mg) is in row 3. Magnesium has 2 complete electron levels and 2 valence electrons in level 3.

Carbon (C) is in row 2. Carbon has 1 complete electron levels and 4 valence electrons in level 2.

Potassium (K) is in row 4. Potassium has 3 complete electron levels and 1 valence electrons in level 4.

Argon (Ar) is in row 3. Argon has 3 complete electron levels and 8 valence electrons in level 3.