

Atomic Theory, Bohr Diagrams, and Periodic Table

1. Classify each element as metal, non - metal, or metalloid

- | | | |
|--------------|-------------|-------------|
| a) germanium | e) boron | h) hydrogen |
| b) calcium | f) rubidium | i) helium |
| c) iodine | g) gold | j) tungsten |
| d) xenon | | |

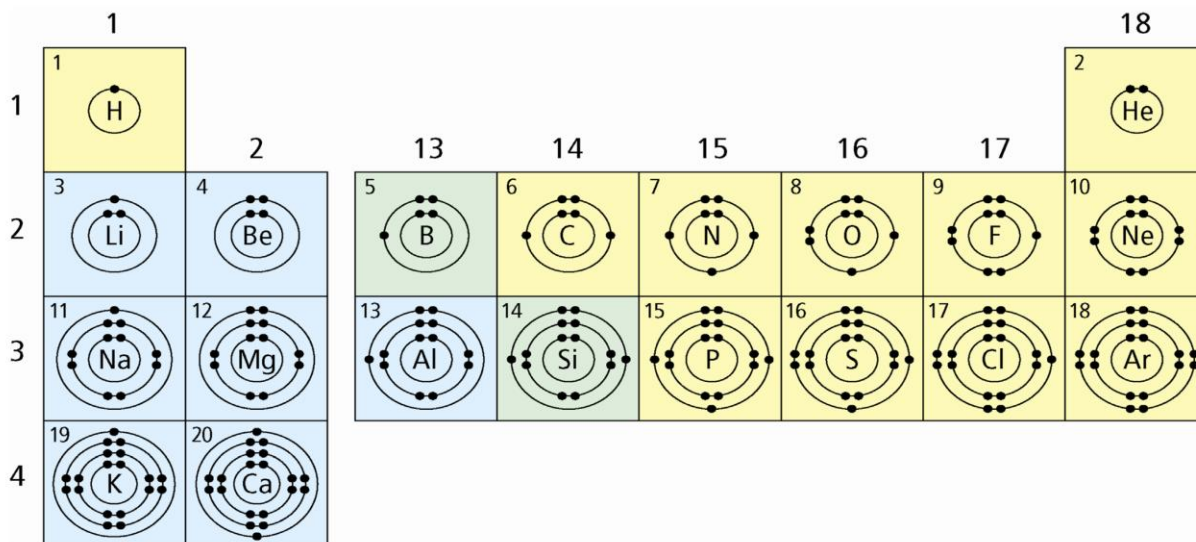
2. Identify each of the following as a neutral atom, cation, or anion.

- | | |
|---------------------|--------------------|
| a) He | e) Na ⁺ |
| b) I ⁻ | f) H ⁻ |
| c) Fe ²⁺ | g) H ⁺ |
| d) O | h) Au |

3. Identify (with colours) the following on the periodic table below:

- | | |
|--|--|
| <ul style="list-style-type: none"> • Alkali metals: use red color • Alkaline Earth metals: use orange color • Transition metals: use no color • Non - metals: use green color • Metalloids: use yellow color • Noble gases: use purple color | <ul style="list-style-type: none"> • Halogens: use dark blue color • Lanthanides: use any color except the ones above • Actinides: use any color except the ones above |
|--|--|

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18



4. Using the periodic table above, write the names of all the elements starting from atomic number 1 to atomic number 20:

Atomic Symbol of an Element	Name of an Element	Atomic Symbol of an Element	Name of an Element
H	hydrogen		

5. Using the Bohr Diagrams above, answer the following questions:

- How many occupied electron shells are there for aluminum?
- How many valence shells are there for aluminum?
- How many electrons are there for aluminum's second shell?
- How many valence electrons are there for aluminum?

6. Using the Bohr Diagrams above, identify the number of occupied shells for each of the following elements:

- calcium
- silicon
- sulfur
- iodine

7. Using the Bohr Diagrams, identify the number of valence electrons for each of the following elements:

- sodium
- phosphorus
- argon
- nitrogen

8. Using the Bohr Diagrams on the previous page, draw a Lewis Diagram (Lewis Structure) for each of the following elements:



9. Beside each compound, write whether it is an ionic or covalent (molecule) compound:

