|  |  |  |
| --- | --- | --- |
| **Exceptions to the Octet Rule**  CλeMis+ry: http://genest.weebly.com  Stop in for help every day at lunch and Tues,&Thurs after school! |  | Name\_\_\_\_\_\_\_\_\_  Period\_\_\_\_\_\_\_\_ |

1. How many protons\_\_\_\_\_\_\_ and neutrons \_\_\_\_\_\_\_\_\_\_ are in:
2. How many valence electrons are in each of the following?

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 1s22s22p5 | a +1 cation of sodium |  |  | a neutral carbon atom |
| \_\_\_\_\_\_\_\_\_ | \_\_\_\_\_\_\_\_\_\_ | \_\_\_\_\_\_\_\_\_\_ | \_\_\_\_\_\_\_\_\_\_ | \_\_\_\_\_\_\_\_\_\_ |

How many protons and neutrons are in:

1. For an atom with atomic number =9, charge of zero, and 10 neutrons…
   1. mass number \_\_\_\_\_\_\_
   2. number of protons? \_\_\_\_\_\_
   3. number of electrons \_\_\_\_\_\_
   4. symbol of the element, with highLow numbers \_\_\_\_\_\_
2. For an atom with 14 protons and 15 neutrons and 18 electrons
   1. mass number \_\_\_\_\_\_
   2. atomic number \_\_\_\_\_\_
   3. number of electrons \_\_\_\_\_\_
   4. symbol of the element \_\_\_\_\_\_
   5. charge of the atom \_\_\_\_\_\_
   6. symbol of the element, with highLow numbers \_\_\_\_\_\_

|  |  |
| --- | --- |
|  | 1. For this atom,    1. how many **total** electrons ?    2. how many protons?    3. how many **valence** electrons? |

1. What is true about the number of particles in an atom that has a neutral charge?
2. What is true about the number of particles in any cation?
3. Write the formula for finding mass number of an atom.
4. Write the formula for finding the charge of an atom.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 1. In the after box redraw what this atom will look like after losing two electrons.   The charge before \_\_\_\_\_\_\_\_  The charge after \_\_\_\_\_\_\_\_\_\_  It became a ( anion / cation ) | Before  A description... |  | After | HighLow Letter symbol for the after atom? |

1. Which element in Group 1 has the largest radius?
2. Which element in Period 1 has the largest radius?
3. The Law of Conservation of Energy says that if nothing enters or leaves a system, the total \_\_\_\_\_\_\_\_\_\_ in that system must be the same before and after any change.

Use this law to spot any fibs below:

|  |  |
| --- | --- |
| 1. ( possible / impossible ) | 1. ( possible / impossible ) |

1. The Law of Conservation of Charge is similar to the two laws above. It says that if nothing enters or leaves a system, the total \_\_\_\_\_\_\_\_\_\_\_\_ in that system must be the same before and after any change.
2. The Law of Conservation of Charge can help us spot wrongly written equations for ions.
   1. Ba + 2e- Ba2+ possible / impossible
   2. F F+ + e- possible / impossible
   3. S S2+ + 2e- possible / impossible
3. Draw a stable Lewis Dot structure for each molecule:

|  |  |
| --- | --- |
| I3-  What’s the name of this geometry? | CO32-  What’s the name of this geometry? |