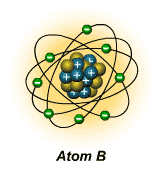
Physics Review 9.1, 9.2,11.3 Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Class \_\_\_\_\_\_\_

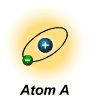
1. Who discovered the electron? How did that change the idea of the atom?
2. List the three parts of an atom with their charges.
3. The atomic number tells you the number of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in one atom of an element. It also tells you the number of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in a neutral atom of that element. The atomic number gives the “identity “ of an element as well as its location on the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
4. The \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of an element is the total number of protons and neutrons in the\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of the atom.

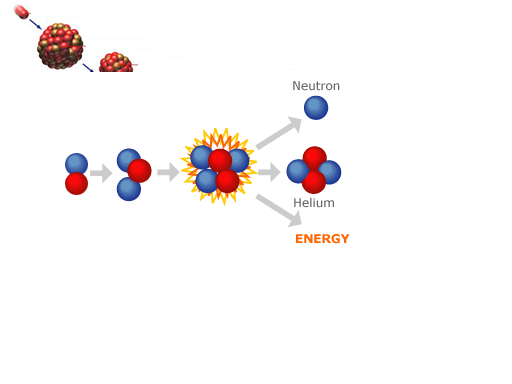
**You may need to use the periodic table in your book (p.225) or tracker to answer questions 5-7:**

1. Complete the table by filling in the empty boxes.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Element | Atomic Number | Number of Protons | Number of Neutrons | Mass Number | Isotope  Symbol |
| Calcium (Ca) |  | 20 | 20 |  |  |
| Nickel (Ni) |  | 28 |  | 59 |  |
| Gold (Au) | 79 |  | 118 |  |  |
|  | 6 |  |  | 14 |  |

1. **Study the drawings and answer the questions below.**



1. How many protons are in atom A? \_\_\_\_\_\_\_\_ atom B? \_\_\_\_\_\_\_\_\_\_
2. How many electrons are in atom A? \_\_\_\_\_\_\_ atom B? \_\_\_\_\_\_\_\_\_\_
3. What element is atom A? \_\_\_\_\_\_\_\_\_\_\_\_\_ atom B? \_\_\_\_\_\_\_\_\_\_\_\_
4. Draw the electrons in their correct energy levels for a neutral sulfur atom with an atomic number of 16. Draw the Lewis dot structure for sulfur.
5.  Label the following diagrams as Fission or Fusion.
6. Where is Fusion used to produce energy?
7. List at least two examples of how fission is used?
8. Define Half-life. What is Carbon-14 most often used for?