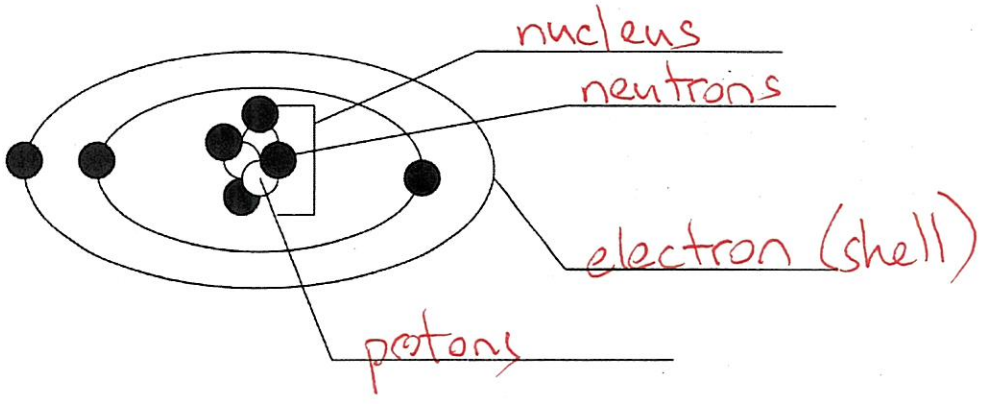
Name: Key Date: Nov. 23, 2022 Block: _____

# Subatomic Particles and Bohr Model Worksheet

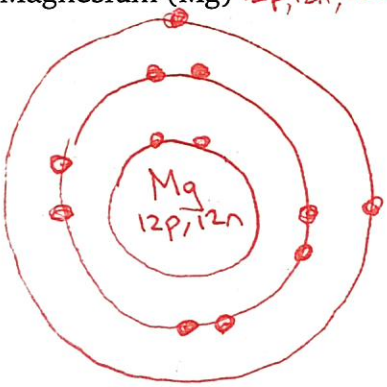
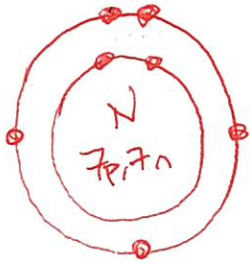
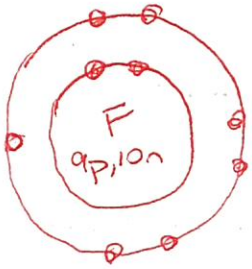
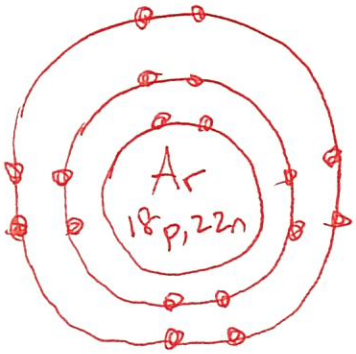
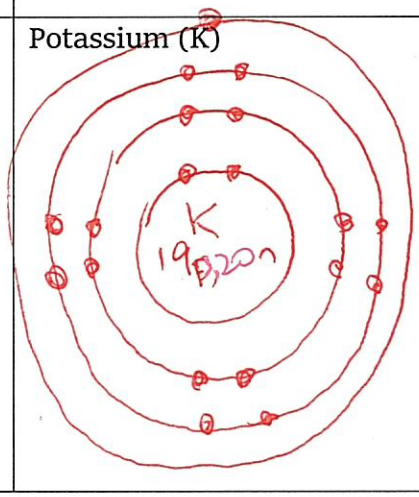
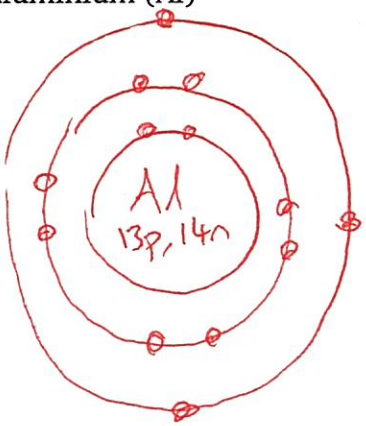
1. The subatomic particle with no electrical charge is the neutron; the subatomic particle with a positive charge is the proton; the subatomic particle with a negative charge is the electron.
2. In a neutral atom, there are the same number of these two particles: protons and electrons.
3. The atomic number ("element number") is the same as the number of protons.
4. Where is most of the mass of an atom located? nucleus
5. Complete the following table.

| Element Name | Element Symbol | Atomic Number | Atomic Mass | Number of Protons | Number of Neutrons | Number of Electrons |
|---|---|---|---|---|---|---|
| Sodium | Na | 11 | 23.0 | 11 | 12 | 11 |
| potassium | K | 19 | 39.1 | 19 | 20 | 19 |
| strontium | Sr | 38 | 87.6 | 38 | 50 | 38 |
| calcium | Ca | 20 | 40.1 | 20 | 20 | 20 |
| Magnesium | Mg | 12 | 24.3 | 12 | 12 | 12 |
| bromine | Br | 35 | 79.9 | 35 | 45 | 35 |
| Aluminum | Al | 13 | 27.0 | 13 | 14 | 13 |
| manganese | Mn | 25 | 54.9 | 25 | 30 | 25 |
| barium | Ba | 56 | 137.3 | 56 | 81 | 56 |
| chlorine | Cl | 17 | 35.5 | 17 | 19 | 17 |

6. Label the parts of this atom (nucleus, protons, electrons, neutrons).



7. The atomic number is the number of protons in one atom of an element. It is also the number of electrons in a neutral atom of that element. The atomic number gives the "identity" of an element. No two different elements will have the same atomic number.
8. In order to calculate the number of neutrons, you must subtract the atomic number from the rounded atomic mass
9. * Chemical reactions involve the sharing and giving of electrons. The number of electrons in an element determines its chemical properties.
10. Draw Bohr models for the following:

| | | |
|---|---|---|
| Lithium (Li) 3p, 4n, 3e   | Hydrogen (H) 1p, 0n, 1e   | Helium (He) 2p, 2n, 2e   |
| Magnesium (Mg) 12p, 12n, 12e   | Nitrogen (N) 7p, 7n, 7e   | Fluorine (F) 9p, 10n, 9e   |
| Argon (Ar)   | Potassium (K)   | Aluminium (Al)   |