**Atomic structure and Periodic chart pre-test review Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

1. Where can you find valence electrons?
2. In the nucleus b. On the electron shells C. on the outermost energy level
3. When calculating the mass of an atom you add the number of \_\_\_\_\_\_\_\_\_\_\_\_\_\_ and the number of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. You do not include the number of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ .
4. Most of an atoms mass is found in the (electron cloud or nucleus).
5. The smallest (least mass) of the subatomic particles is the
	1. Proton b. Neutron c. Electron
6. The \_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ are found in the nucleus of an atom. The \_\_\_\_\_\_\_\_\_\_\_ orbit the nucleus of an atom.
7. The amu (atomic mass unit) of a proton is \_\_\_\_\_\_\_\_\_\_\_\_\_ of a neutron is \_\_\_\_\_\_\_\_\_\_\_\_\_ of an electron is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
8. Which is the biggest of the subatomic particles?\_\_\_\_\_\_\_\_\_\_ Which is the smallest? \_\_\_\_\_\_\_
9. **Electrons on energy levels farthest from the nucleus have (more or less) energy**.
10. The proton has a \_\_\_\_\_\_\_\_\_\_\_ charge, the neutron has a \_\_\_\_\_\_\_\_\_\_ charge and the electron has a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ charge.
11. The element silver has a mass of 107. How many protons does it have? \_\_\_\_\_\_\_\_\_ How many neutrons?\_\_\_\_\_\_\_\_\_\_\_ How many electrons?\_\_\_\_\_\_\_\_\_\_\_\_
12. **To be neutral an element must have the same number of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_ .** (subatomic particles)
13. Elements in the same groups have the same number of \_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_.
14. Elements in the same period have the same number of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ .
15. Elements on the left side of the periodic chart are:
	1. Metallic b. Non-metallic c. Metalloids d. Gases
16. Elements in the same group have:
	1. Same mass number b. Same number of protons C. same chemical properties
17. The element \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ had 33 protons and 41 neutrons.
18. The element \_\_\_\_\_\_\_\_\_\_\_\_ has 21 neutrons and 18 electrons
19. What does Calcium, beryllium and radium have in common?
	1. Same atomic number b. same number of orbitals c. same number of valence e-
20. **For an atom to have a negative charge, it will need to have more \_\_\_\_\_\_\_\_\_ than \_\_\_\_\_\_\_\_\_ .**
21. Label the families on the periodic table on the left, color in the metalloids and label the metals and non-metals on the periodic table to the right.



1. List 3 element that are found in the actinide series
2. Which group of elements has 7 valence electrons?
3. In group 1, which element has the largest atomic mass? \_\_\_\_\_\_\_\_\_\_\_\_ which one has the smallest\_\_\_\_\_\_\_\_\_\_\_?
4. Does carbon or oxygen have a smaller mass? \_\_\_\_\_\_\_\_\_\_\_\_\_
5. Which element has more protons? Zinc or gold
6. In a family the element that has the smallest atomic number would be found at the top or at the bottom of the periodic chart?
7. **In a family the element that has the largest mass would be found at the top or at the bottom of the periodic chart?**
8. As you move from left to right in a period. The next element will (gain or lose) one \_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_.
9. Which group on the periodic chart is the most reactive?\_\_\_\_\_\_\_\_\_\_\_\_\_ least reactive?\_\_\_\_\_\_\_\_\_\_\_\_\_
10. Would (Magnesium or Krypton) have properties similar to Neon?
11. Noble gasses are \_\_\_\_\_\_\_\_\_\_ and are found in group \_\_\_\_\_\_ on the (left or right) side of the periodic chart.
12. An element with 6 electrons in its valence shell (or outermost energy level) would be found in group #\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
13. All of the elements in group 2 are considered:
	1. Metals b. non metals c. metalloids d. Halogens
14. **Valence electrons are used to \_\_\_\_\_\_\_\_\_\_\_ with other atoms**
15. What group is Argon found in?
16. \_\_\_\_\_\_\_\_\_\_\_\_\_\_ (metals, nonmetals, metalloids or inert gasses) are malleable and conduct electricity.
17. Name one halogen \_\_\_\_\_\_\_\_\_\_\_\_\_
18. Name one noble gas \_\_\_\_\_\_\_\_\_\_\_\_\_
19. The periodic chart is organized
	1. Randomly b. by similarities c. and can be changed if needed
20. **Which part of the periodic chart will you find elements that have large masses?**
21. Isotopes have a different number of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ so their atomic \_\_\_\_\_\_\_\_\_\_\_ will be more than the normal element.
22. Although there is very little difference a \_\_\_\_\_\_\_\_\_\_ is bigger than a \_\_\_\_\_\_\_\_\_\_\_ which is far bigger than \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (proton, neutron, an electron)
23. The periodic chart is organized by atomic number. Knowing this you can say it is also organized by order of increasing \_\_\_\_\_\_\_\_\_\_\_\_\_. (subatomic particle)
24. **Valance electrons are used for bonding**. So how many electrons do group 3 elements have to use for bonding?
25. Molecules that have more than one type of element are \_\_\_\_\_\_\_\_\_\_\_\_ instead of symbol they are represented by a \_\_\_\_\_\_\_\_\_\_\_\_\_.
26. The first energy level (shell) of an atom will hold \_\_\_\_ electrons. The second shell will hold\_\_\_\_ and the third will hold \_\_\_\_\_.
27. Families are also called \_\_\_\_\_\_\_\_\_\_\_\_ or \_\_\_\_\_\_\_\_\_\_\_\_ .
28. Draw and label the element Sulfur.
* include protons, electrons and neutrons
* Charges (positive, negative an neutral)
* Valence shell (highest energy level)
* How many valence electrons does it have to share **in bonding**?

*Make sure you know where the families are in the periodic chart. You will be expected to know the names of them to answer some of the questions.*

*Make sure you know how to draw and label an atom.*

*Make sure you understand valence electrons and how to find them.*

*Remember the area outside of the nucleus can be called – electron shells, energy levels and orbitals. Only the outermost ring is called the valence shell or highest energy level.*

*Items in bold have not been discussed in depth in class, make sure you study them.*

*Make sure you ask questions during the review days if you don’t understand something.*

*Good Luck!*