Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Magic Square     Atomic Structure and Theory

Directions:  Put the number of the definition from the list below into the square with the appropriate term.  *Some will not be used!* Check your answers by adding the numbers to see if all the sums of all rows, both across and down add up to the same number, the Magic #.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Democritus    \_\_\_\_\_ | Dalton    \_\_\_\_\_ | Thomson    \_\_\_\_\_ | Chadwick    \_\_\_\_\_\_ | Total    \_\_\_\_\_ |
| Rutherford    \_\_\_\_\_ | Proton    \_\_\_\_\_ | Atom    \_\_\_\_\_ | Bohr    \_\_\_\_\_ | \_\_\_\_\_ |
| Wave Model    \_\_\_\_\_ | Neutron    \_\_\_\_\_ | Nucleus    \_\_\_\_\_ | Alpha particle    \_\_\_\_\_ | \_\_\_\_\_ |
| Electron    \_\_\_\_\_ | Model    \_\_\_\_\_\_ | Energy levels    \_\_\_\_\_ | Electron cloud    \_\_\_\_\_ | \_\_\_\_\_ |
| Total   \_\_\_\_\_ | \_\_\_\_\_ | \_\_\_\_\_ | \_\_\_\_\_\_ |  |

**Magic Number \_\_\_\_\_\_**

1.      Represented by a symbol; all are found on the Periodic Table

2.      Greek philosopher, his beliefs were met with criticism from other philosophers.

3.      Used by Rutherford in his experiment; made of two protons and two neutrons

4.      The paths in which electrons circle the nucleus according to the Bohr model

5.      The positive particle in the nucleus of an atom

6.      The tiny positive core of an atom; contains protons and neutrons

7.      Formed the atomic theory model of the atom; English schoolteacher

8.      Discovered the nucleus using his gold foil experiment

9.      Current explanation of where electrons might be found in the atom

10.   Used by scientists to explain something we can not see or understand

11.   The smallest particle of an element that has the properties of that element

12.   Discovered the neutron

13.   Current model of the atom; proposed by Schrodinger

14.   Mass of protons and neutrons

15.   Developed the model of the atom in which electrons orbit the nucleus in energy levels

16.   The negative particle that circles the nucleus

17.   The neutral particle in the nucleus of an atom

18.   Proposed the “plum-pudding” model of the atom; discovered the electron