Unit 2 Review

1. What contribution did each of these scientists make?
2. Democritus
3. Dalton
4. Thomson
5. Millikan
6. Rutherford
7. Chadwick
8. Becquerel
9. The Curies
10. Fill in this table

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Isotope-mass no. | Total Protons | Total Neutrons | Mass Number\* | Total Electrons Outside Nucleus | Isotopic Notation | Atomic Number\* |
| Potassium-40 | 19 | 21 | 40 | 19 |  |  |
| Lithium-6 |  |  |  |  |  |  |
|  | 2 | 1 |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  | 90 | 38 |  |  |

1. Calculate the average atomic mass for 69.17% copper-63 and 30.83% copper-65.
2. Complete the following table.

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Charge | Penetrating  Power | Equation Symbol |
| BETA |  |  |  |
| ALPHA |  |  |  |
| GAMMA |  |  |  |

1. Write the nuclear equations for the following radioactive decay series. Use the periodic table.
2. Radium-223 emits an alpha

1. Actinium-227 emits a beta
2. Polonium-215 emits an alpha, alpha, and a gamma

*Use the following chart to answer questions*

|  |  |
| --- | --- |
| **Radioactive Substance** | **Approximate half-life** |
| Radon-222 | 4 days |
| Iodine-131 | 8 days |
| Radium-226 | 1600 years |
| Carbon-14 | 5730 years |
| Plutonium-239 | 24,120 years |
| Uranium-238 | 4,470,000,000 |

1. If we start with 8000 atoms of radium-226, how much would remain after 3,000 years?
2. If 80.0 grams of Carbon-14 decays to 25.0 grams in a fossil, how old is the fossil? (How much time has gone by?)