**Unit 2 Atomic Theory Remediation**

1. Fill in the following chart, noting if the description is describing nuclear *fission* or *fusion*.

|  |  |
| --- | --- |
| **Fission or Fusion?** | **Description** |
|  | Occurs on the sun |
|  | Type of energy created by nuclear power plants |
|  | Involves the splitting of two atoms |
|  | Two small atoms are combined into one larger atom |
|  | Atomic bombs dropped on Japan in WWII were products of this energy |

1.  Using the disintegration series given, write the decay equation for the following:
	1. 230Th
	2. 214Pb
2. a. If Gallium-68 has a half-life of 68.3 minutes, how much of a 10 g sample is left after two half-lives?

1. How much total time has passed?
2. If an electron moves from n = 4 to n = 2, what wavelength of light will be emitted?
	1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ nm b. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ m

c. What color of light is emitted? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 5. Complete the chart below by filling in the blanks.

|  |  |  |  |
| --- | --- | --- | --- |
| **Nuclear Notation** | **Number of Protons** | **Number of Neutrons** | **Number of Electrons** |
|  14C |  |  |  |
| 56Fe2+ |  |  |  |
|  | 34 | 45 | 36 |

 6. Find the average atomic mass of an element X given the information below:

|  |  |  |
| --- | --- | --- |
| **Isotope** | **Mass(amu)** | **% Abundance** |
| 1 | 36.765 | 10.67 |
| 2 | 38.056 | 77.68 |
| 3 | 40.003 | 10.34 |
| 4 | 41.060 | 3.31 |