**Review Sheet: Flame Test & Average Atomic Mass**

1. Explain why line spectra are formed when samples of elements are heated.
2. How does spectroscopy work?
3. Fill out the blanks in the following chart:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Symbol | Protons | Neutrons | Electrons | Mass (amu) | Atomic number |
| Hg |  |  |  | 209 |  |
|  | 97 | 149 |  |  |  |
|  |  |  | 86 | 223 |  |
|  | 56 | 111 |  |  |  |

1. When you look at the average atomic masses of elements on the periodic table, they are always decimals rather than whole numbers. Given that there are only whole numbers of protons and neutrons in an element, how can this be?
2. Using your knowledge of isotopes, explain why 53I is too unstable to exist.
3. What is the average atomic mass of an element that has the following information:

78Br Abundance = 6.2%

79Br Abundance = 91.9%

81Br Abundance = 1.9%