Honors Chemistry: Homework Set 4-3

1. Below, emission-line spectral chart for five elements and four unknown samples are given. Answer the questions based on the information given in the chart.

| | | | | | - | | | 1 |
|--------------|-----|-----|-----|---------------|--------------|-----|-----|----------|
| | 400 | 450 | 500 | 550 ength; | 600 wavel | 650 | 700 | 750 |
| Lithium (Li) | | | | | | | | 822 |
| Sodium (Na) | | | | | | | | <u>.</u> |
| Helium (He) | | | | | | | | |
| Potassium(K) | | ! | | | | | 1 | |
| Cadmium(Cd) | | | | | ı ı | | | |
| Hydrogen (H) | | | | | | | | |
| _ | | | | | | | | |
| Unknown W | | | | | | | | |
| Unknown X | | | | | | | | |
| Unknown Y | | | | | | | | |
| Unknown Z | | | | | | | | |

- a. List all elements present in unknown sample W.
- b. List all elements present in unknown sample X.
- c. List all elements present in unknown sample Y.
- d. List all elements present in unknown sample Z.
- e. Explain, in terms of electron transition, how emission-line spectra are produced by atoms.