Directions: Answer the following questions.

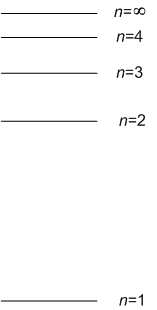
**Standard 1:**

1. What was Democritus atomic theory?
2. What was Dalton’s atomic theory?
3. What is Rutherford’s model? Describe his experiment
4. What is Thomson’s model? Describe his experiment
5. What is the Bohr model of an atom?
6. What is the current model of the atom? Define the current model.
7. What order do the models go in? Why have atomic models changed over time?

**Standard 2:**

1. Define photon.

A B C D



1. Answer the following based off the picture to the right:
   1. Which arrow(s) is absorbing energy?
   2. Which arrow is releasing the most energy?
   3. If arrow D is representing blue light what color could C involve?

**Standard 3:**

1. What is the relationship between wavelength and frequency? Relationship between frequency and energy? What speed does all light travel at?
2. Identify the type of radiation for the following:
   1. A wavelength of 5.3 x 10-11 m
   2. A frequency of 3.47 x108 Hz
3. Would radar or radio waves have more energy? Explain why.

**Standard 4:**

1. What is the evidence that light has particle properties?
2. Describe the full process that causes the different lines on an atomic spectrum or different colors in flame tests. Why do different elements have different spectrums?

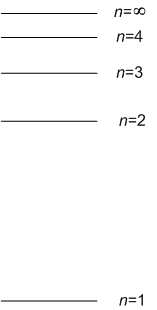
**Standard 5:**

1. What is the difference between the Bohr and Quantum Mechanical Model?
2. What is the difference between orbits and orbitals?
3. Write the 2 electron configurations for rhodium.

**Overarching Concepts and General Review:**

1. Compare and contrast the Rutherford and plum pudding models.
2. Describe how electrons absorb and release energy in an atom.
3. Answer the following questions about light being absorbed/released for the diagram on the right.

A B C D

* 1. Which arrow represents the highest energy being released? Explain how you know.
  2. Which arrow represents the largest wavelength absorbed? Explain how you know.
  3. Which arrow represents the largest frequency released? Explain how you know.