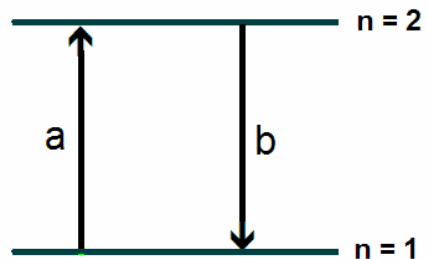


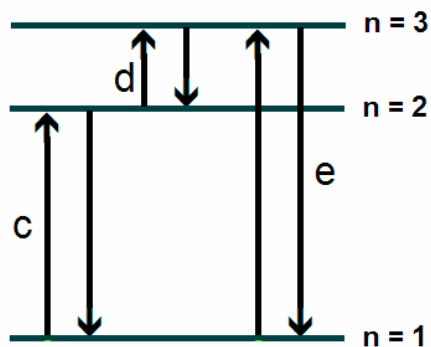
ASTR 1101-001
Spring 2008
Review for Exam #3

1. In the two-level atom shown below, which electron transition is associated with the emission of light? Which transition is associated with the absorption of light?
2. If the “c” transition marked in the three-level atom is associated with the absorption or emission of a *red* photon, what color photon would be absorbed in making the transition marked “d”? [Choose from: purple, blue, orange, infrared.]
3. Assume the electron in the three-level atom is sitting in its ground state (orbital level marked $n = 1$). If the $n = 1$ to $n = 3$ transition marked “e” is associated with the absorption of a *purple* photon, what color photon would have to be absorbed to ionize the atom? [Choose from: ultraviolet, blue, orange, red, infrared.]

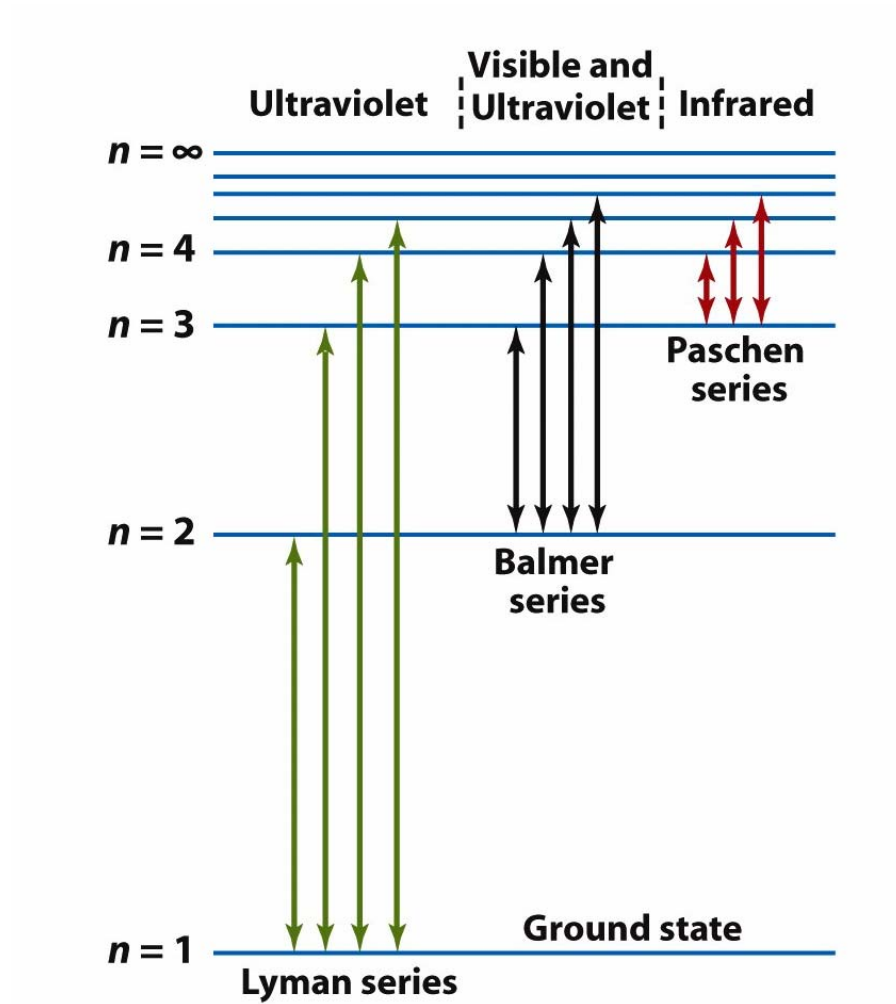
Two-level Atom



Three-level Atom



7. Make up your own questions regarding the following figure, which shows details about the electron orbital levels in Hydrogen atoms.



8. Make up your own questions regarding the following figure, which summarizes the Chapter 6 discussion of modern astronomical telescopes.

