

**Worksheet #9**

Friday, April 26, 2024

**Name:**

**Questions (5 pts):**

Consider the Lyman  $\alpha$  line for a hydrogen atom in a static magnetic field. If we monitor the unpolarized emission, what spectrum would we see in the electric dipole approximation? What changes if we select z- polarization? x- or y- polarization? Sketch the energy level diagram with allowed transitions and the corresponding spectra.