

# Act 1

1. Suppose the electron is in the  $l=1, m=1$  state. In what direction(s) (at what  $\theta$ ), is the electron most likely to be found?  $Y_{1,\pm 1} \propto \sin \theta$ 
  - a.  $\theta = 0^\circ$  (north pole)
  - b.  $\theta = 45^\circ$
  - c.  $\theta = 90^\circ$  (equator)