

Solution

We just saw that radio frequency photons can cause a nuclear spin to flip.
What is the angular momentum of each photon?

a. 0

b. $\hbar/2$

c. \hbar

The nuclear spin has flipped from \uparrow to \downarrow (or vice versa).
That is, its z-component has changed by \hbar . Conservation
of angular momentum requires that the photon have
brought (at least) this much in.