

For Monday 11/5, read Griffiths' section 4.4.3 and turn in by 9:30 am:

1. Conceptual: With 2 spin-1/2 particles, what are the possible results of a measurement of spin for the entire system?
2. Conceptual: If we take 2 spin-1/2 particles in combined state $|1\ 1\rangle$ and measure the spin of ONE of the particles, only, what are the possible results of a measurement and what are the probabilities? What if the combined system was $|1\ 0\rangle$?
3. Conceptual: Say you have 2 particles, one with spin 1 and the other with spin $\frac{1}{2}$. You measure the total spin of the system to be $\frac{3}{2}$ and the z-component to be $-\frac{1}{2}$. What are the possible results of measuring each individual particle's z-component of spin and what are the probabilities?
4. Conceptual: Say we have 2 particles, one is in state $|3/2\ -3/2\rangle$ and the other in state $|\frac{1}{2}\ \frac{1}{2}\rangle$. What are the possible states of the combined system of these 2 particles and what is the probability of measuring each?
5. Math: Griffiths problem 4.34
6. Math: Griffiths problem 4.36

"For realz" weekly homework due 9:30 am on Wednesday 11/7 is math problems from 11/2 and 11/5.

For Wednesday 11/7, read section 5.1 and Q8.6 and turn in:

1. Conceptual: List several properties of bosons vs. fermions.
2. Conceptual: Explain, using Quantum Mechanics, the source of the covalent bond.
3. Math: Griffiths problem 5.4
4. Math: Griffiths problem 5.6

For Friday 11/9, read section 5.2 and turn in by 9:30 am:

1. Conceptual: Why must the Helium ground state include antisymmetric spin?
2. Conceptual: Explain parahelium and orthohelium. Which is the ground state?
3. Math: Griffiths 5.9
4. Conceptual: Griffiths 5.12