

Physics 556/714 Problem Set #4

due *beginning of class* Thursday Oct 9

Note that there is an online copy of Clebsch-Gordon coefficients at <http://physics.hallym.ac.kr/education/hep/rpp/page1287.gif>

1. Griffiths problem 4.11: "In the decay $\Delta^{++} \rightarrow p + \pi^+, \dots$ "
Explain your reasoning carefully.
2. Griffiths problem 4.13: "Suppose you had two particles of spin 2, ..."
3. Griffiths problem 4.18: "Suppose an electron is in the state ..."
In this problem the original state is given to you in the z basis (i.e. with S_z components specified).
4. Griffiths problem 4.19: "Show that $\sigma_x^2 = \sigma_y^2 = \sigma_z^2 = 1$ "
5. Griffiths problem 4.20: "Use the results of problem 4.19 to show that"
6. Griffiths problem 4.38: "For two particles to interconvert, ..."

714 students please also do the following:

7. Griffiths problem 4.23: "The extension of everything in 4.4 to higher spin..."
Don't bother with part d) for the spin 3/2 case.