Math 4500 Homework Assignment #9 Due by March 31

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It helps to ask questions early.

Exercise I. Let $(\pi_2, V(2))$ be the 3-dimensional irreducible representation of SO(3). Using the basis $x^{1-n}y^{1+n}$ given in class, compute the matrix entries f_{n0} . Use the spherical coordinates provided in the slides.

Exercise II. Compute the harmonic polynomials of degree 1 in x, y, z. Find an appropriate basis, write the functions in spherical coordinates, and compare with the answer in Exercise I.