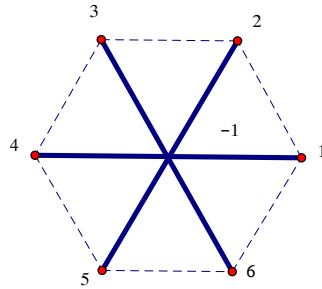


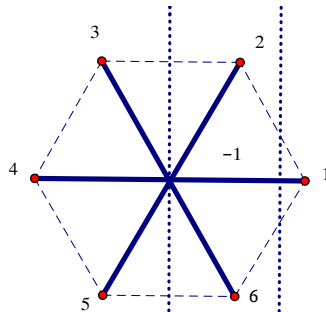
Math 4550 Homework #8

Problems due in class Friday, November 9: Read Section 5.9 in my book. Extra credit if you build some interesting examples.

1. Consider the following tensegrity where the vertices form a regular hexagon with cables on the outside and struts as long diagonal. Compute the equilibrium stress and the stress matrix Ω , where the struts have stress -1 .



2. Find the eigenvectors and eigenvalues of the the stress matrix Ω in Problem 1 (Hint: Use the symmetry).
3. For the two dotted lines in the following Figure, sketch the resulting tensegrity when each of those dotted lines is sent to the line at infinity by a projective transformation.



4. In the following figure the hexagon bar framework has 3-fold rotational symmetry, but not 6-fold symmetry. Is this framework globally rigid in the plane? (Hint: Think push-me, pull-you. Rishi pointed out a mistake in an earlier version of this problem.)

