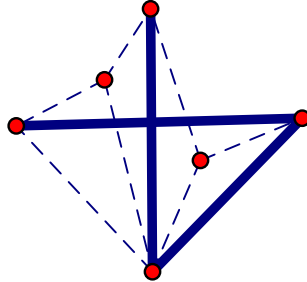


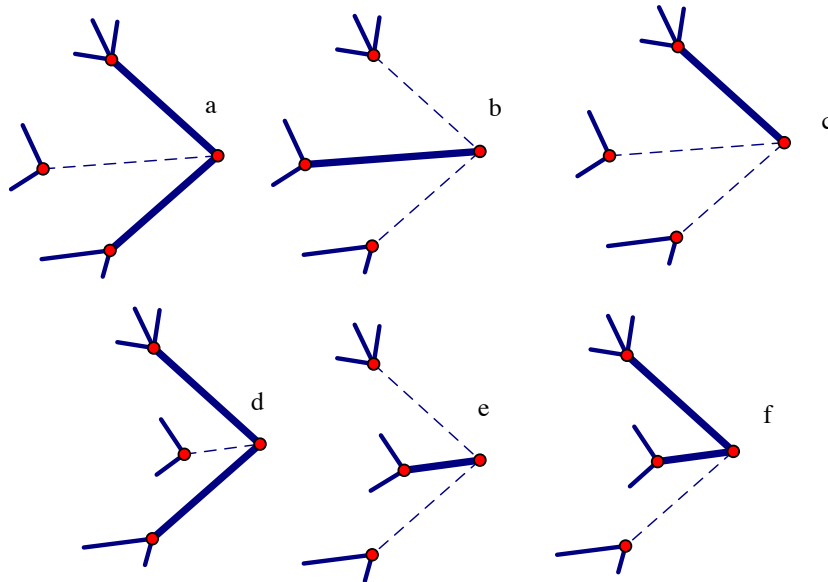
Math 4550 Homework # 5

Problems due in class Friday, September 28: Read Sections 5.10 and 5.11 in my book. Extra credit if you build some interesting tensegrities.

1. Show that the following tensegrity in the plane is universally rigid (i.e. superstable)?



2. In each of the following portions a planar tensegrity, indicate which ones can be superstable by considering the cable/strut designation at those vertices and indicate why. (Hint: any equilibrium stress at each of these 3-valent vertices is unique up to scaling.)



3. In dimension 3, suppose that a superstable tensegrity is such that each edge is a cable or a strut, but not both. Let c be the minimum length of the cables and s the maximum length of the struts. Choose your favorite tensegrity and calculate the ratio $c/s = \rho$. I will give the most points to the person whose tensegrity has the largest value of ρ . Good luck, but make sure your tensegrity is superstable.