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% AEM 4501 Homework 4 Problem 2
a = 1.5;
b = 1;
P = 1000;
MatsSets(1).E = 70e9;
MatsSets(1).A = 7.065e-4;
MatsSets(1).rho = 8.1;
% rho is mass density/length and is used by dynamics code
PD.N = 4;
PD.NodePos = [0, 0, 0;
               a, 0, 0;
               0, b, 0;
               a, b, 0];
PD.NE = 5; % Change this depending on the number of members
% change PD.ElmConnect and PD.ElmMats as well
PD.ElmConnect = [1, 2;
                  1, 3;
                  3, 4;
                  2, 4;
                  1, 4];
PD.NM = 1;
PD.MatsSets = MatsSets;
PD.ElmMats = [1;
               1;
               1;
               1;
               1];
PD.BCType = [1, 1, 1;
              0, 1, 1;
              0, 0, 1;
              0, 0, 1];
% Note z displacement fixed for all since we're in 2D
PD.BCVal = [0, 0, 0;
             0, 0, 0;
             0, 0, 0;
             P, 0, 0];
PDans = PD_truss_static(PD);
PlotTruss(PDans,1000,'y','y');

% loop for the forces and stresses in all the elements
for i = 1:PD.NE
    force = PDans.ElmForce(i); %(unit Newton for force)

    disp(['Force in element ', num2str(i), ':', num2str(force)]);

    stress = PDans.ElmStress(i); %(unit Pascal for Stress)
    disp(['Stress in element ', num2str(i), ':', num2str(stress)]);

    disp(' ');
end

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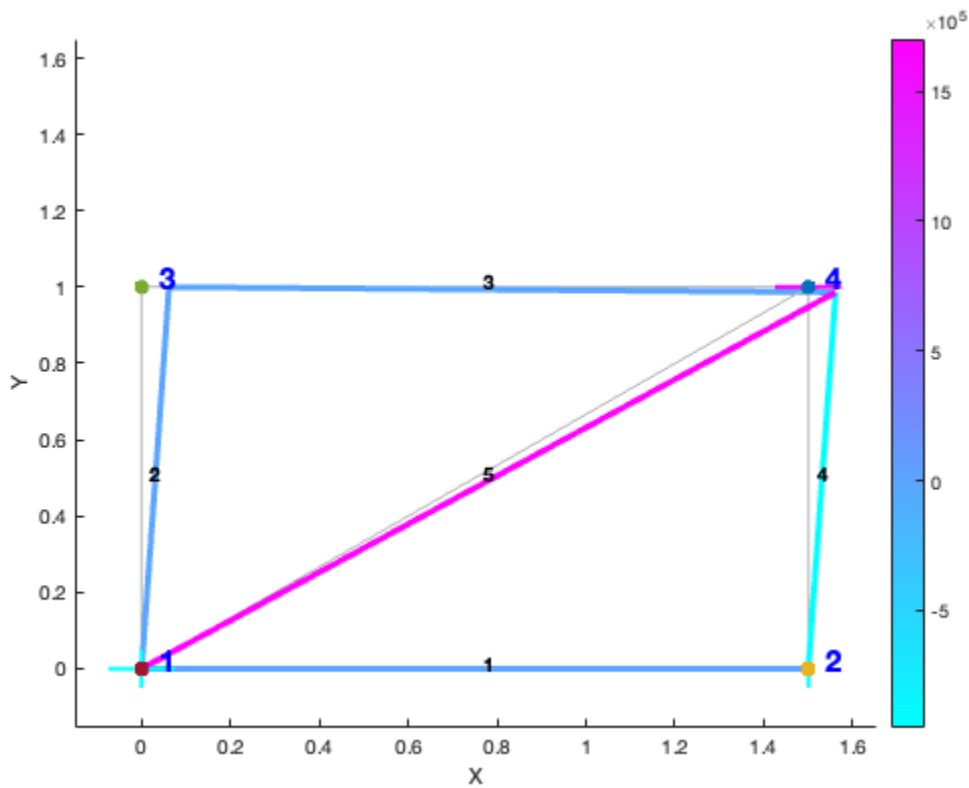
Force in element 1:0  
Stress in element 1:0

Force in element 2:0  
Stress in element 2:0

Force in element 3: $4.5475e-13$   
Stress in element 3: $6.4366e-10$

Force in element 4:-666.6667  
Stress in element 4:-943618.778

Force in element 5:1201.8504  
Stress in element 5:1701132.9443



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