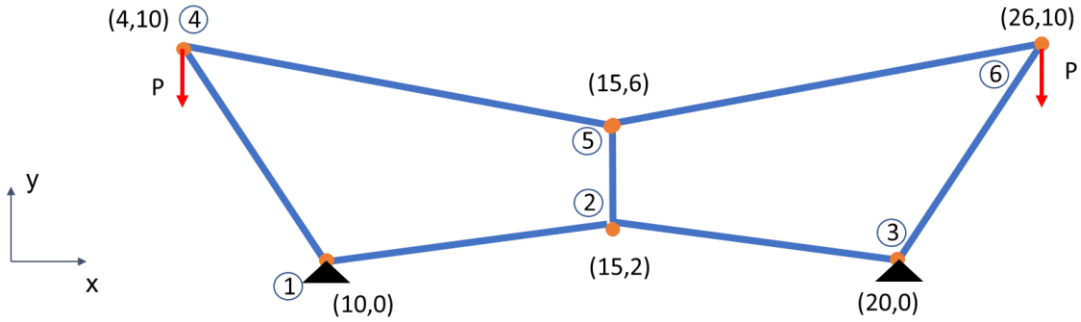
CEE 2333
HW8b
(20 points)
Due November 29, 2021

Use the Matlab code from HW7b to perform a finite element analysis of the same structure, but take advantage of the symmetry of the structure and loading, i.e., only a half of the structure should be modeled explicitly.



Load P=10,000 lb. The modulus of elasticity and Poisson's ratio are 36,000 ksi and 0.25, respectively. Assume that the out-of-plane thickness is 1 in and the plate is in plane stress condition. Use Gauss integration with $n_x=n_y=2$.

Compute nodal displacements and stresses at Gauss points.

The submission should include:

1. A zip file with the Matlab code and input files
2. A report documenting:
    a. Global stiffness matrix
    b. The stiffness matrix after the boundary conditions are applied
    c. The resulting displacements
    d. The stresses at each Gauss point