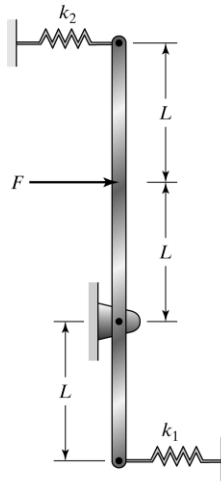Please show your work and draw a box around your answer to receive full credit.

1) The members of the truss shown in Figure 1 have a cross-sectional area of 2 in^2 and are made of structural steel (E = 30 × 10^6 lb/in^2). Use Matlab to determine the deflection at each joint, the stress in each member, and the reaction forces. Draw boxes around the output for the displacement at each joint, the internal stresses in each element, and the reaction forces.
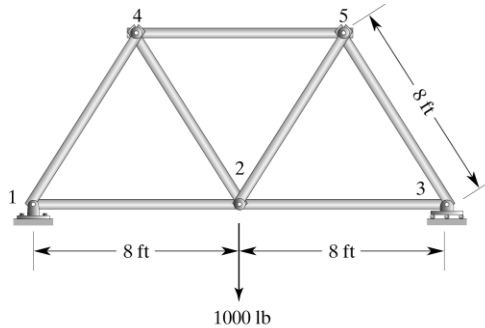
Figure 1.

2) Determine the deflection of each spring for the system shown in Figure 2 by applying a) the static equilibrium equations and b) the minimum potential energy approach. Neglect the mass of the connecting rod.

Figure 2.