

- 3.23 For the truss shown in Figure P3–23, solve for the horizontal and vertical components of displacement at node 1. Also determine the stress in element 1. Let  $A = 1 \text{ in}^2$ ,  $E = 10.0 \times 10^6 \text{ psi}$ , and  $L = 100 \text{ in}$ .

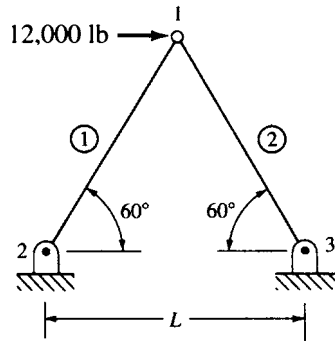


Figure P3–23

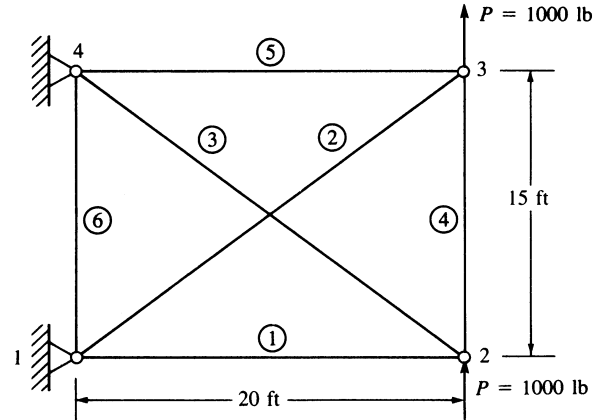


Figure P3–24

- 3.24 Determine the nodal displacements and the element forces for the truss shown in Figure P3–24. Assume all elements have the same  $AE$ .
- 3.25 Now remove the element connecting nodes 2 and 4 in Figure P3–24. Then determine the nodal displacements and element forces.
- 3.26 Now remove *both* cross elements in Figure P3–24. Can you determine the nodal displacements? If not, why?
- 3.27 Determine the displacement components at node 3 and the element forces for the plane truss shown in Figure P3–27. Let  $A = 3 \text{ in}^2$  and  $E = 30 \times 10^6 \text{ psi}$  for all elements. Verify force equilibrium at node 3.

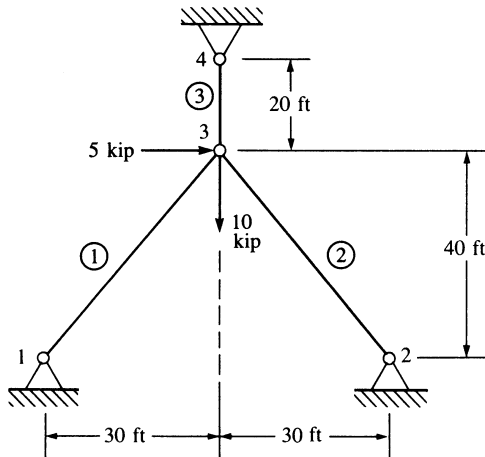


Figure P3–27