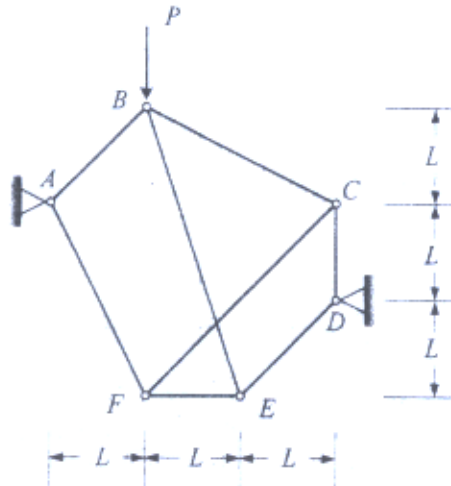
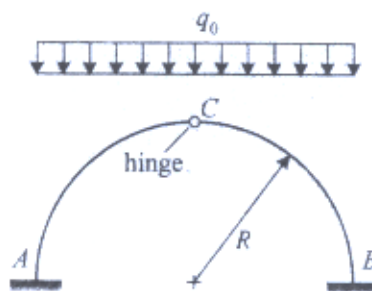


1. Determine whether the truss is stable or not. If it is stable, find the internal force in each member due to the load P acting at joint B . (25%)

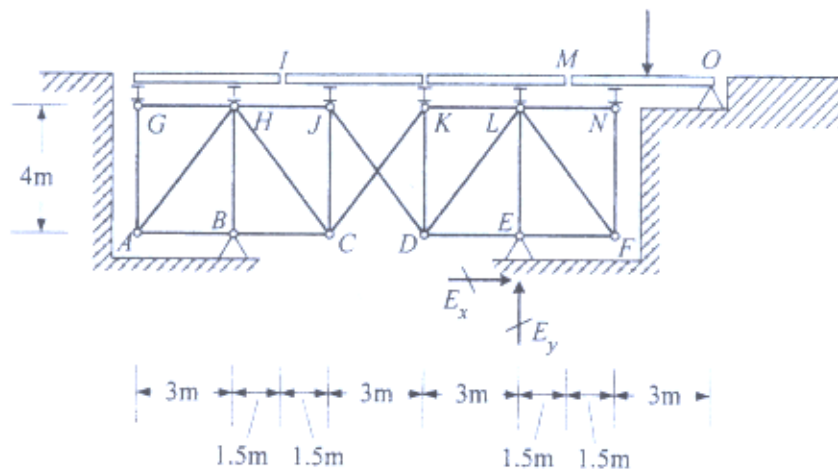


2. The circular arch ACB , having radius of curvature R and constant flexural rigidity EI , carries a uniform load q_0 along the horizontal as shown in the figure. Neglect axial and shear deformations, and the effect of curvature of the arch axis.
- Determine the vertical displacement of the hinge at C .
 - Determine the maximum (compressive) axial force in the arch.
- (25%)



(背面仍有題目,請繼續作答)

3. Loads move along the top chord on the stringers as shown in the figure. Draw the influence lines for (a) the reactions E_x and E_y at E , and (b) the axial forces in members KL and LD of the truss. (25%)



4. The flexural rigidity EI is constant throughout the frame shown in Figure 4-1. Consider only flexural deformation.
- (a) By using the slope-deflection equations, find the stiffness matrix corresponding to the possible joint displacements numbered in order as shown in Figure 4-1.
- (b) If the angles of rotation at C caused by the two loadings as shown in Figures 4-2 and 4-3 are the same, determine the ratio M_c/q_0 . (25%)

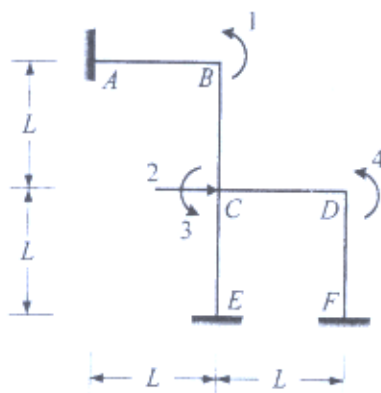


Figure 4-1

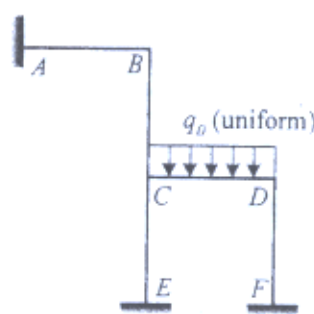


Figure 4-2

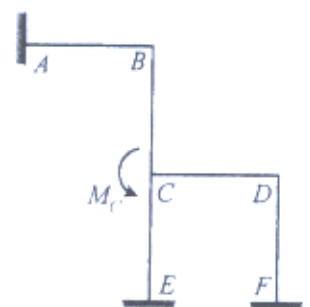


Figure 4-3