

10. (continued)

Figure Q10(d) shows the structure used to support the lift motor and cable drum.

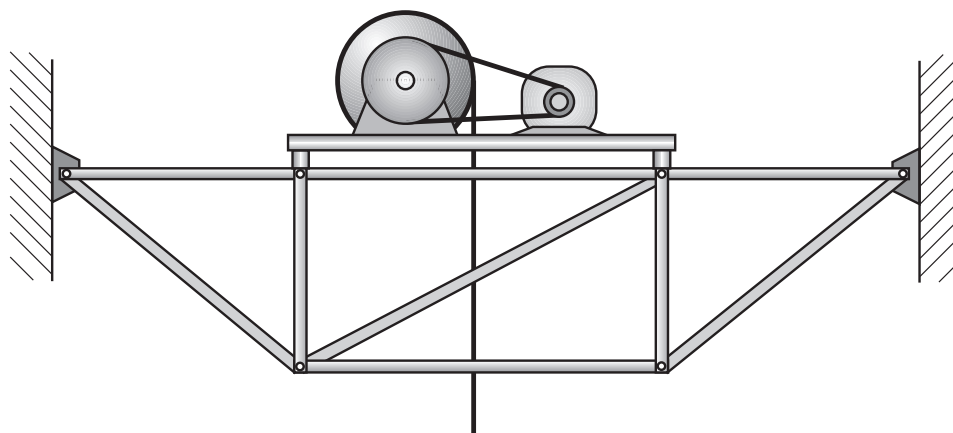


Figure Q10(d)

The free-body diagram in Figure Q10(e) shows the forces acting on one truss of the structure at a particular instant.

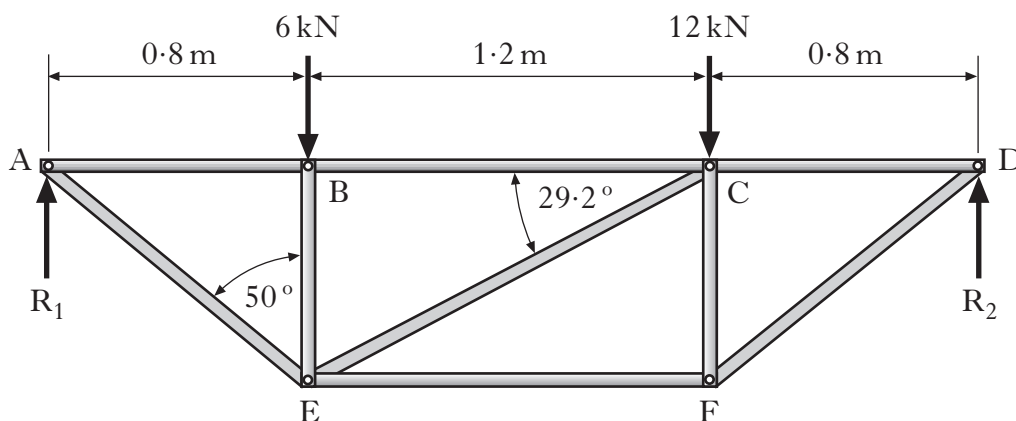


Figure Q10(e)

(d) For the loading conditions shown in Figure Q10(e):

- (i) determine the magnitude of  $R_1$ ; 2
- (ii) use *nodal analysis* to calculate the magnitude and nature of the forces in members AE, AB, BE and CE. 6

(20)