

※ 考生請注意：本試題可使用計算機。請於答案卷(卡)作答，於本試題紙上作答者，不予計分。

1. The trussed beam is subjected to a uniform live load of 10 kN/m. Determine (a) the maximum upward reaction at the support E , (b) the maximum counterclockwise shear in the beam at a point just to the right of D , and (c) the maximum tension in truss member BI . (25%)

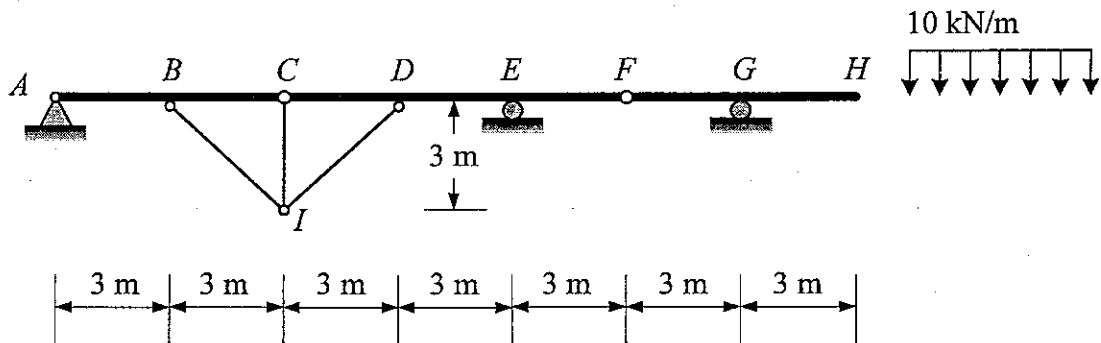


Fig. 1

2. A load is applied to the truss at joint E and the force in each member is computed as shown in Fig. 2. Positive numbers indicate tensile forces and negative numbers indicate compressive forces. The axial rigidity $EA = 60 \times 10^3$ kN for all members. Determine (a) the vertical deflection of joint B , and (b) the angle of rotation of member BE . (25%)

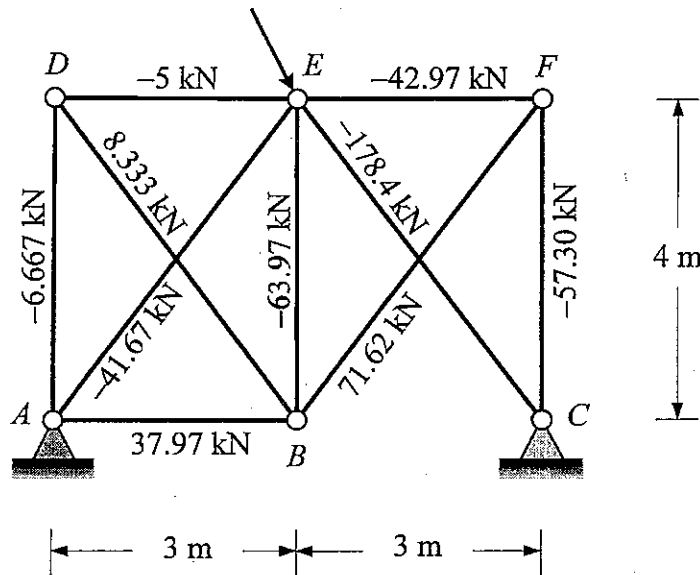


Fig. 2

3. Use the conjugate-beam method to determine the slope at C . The flexural rigidity EI is constant. (25%)

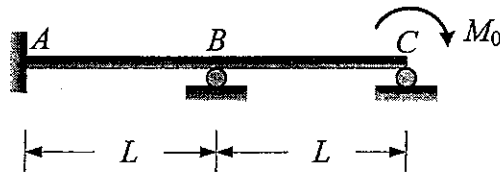


Fig. 3

4. Use the slope-deflection method to determine the moments at joint B . The flexural rigidity EI is constant throughout the entire frame. (25%)

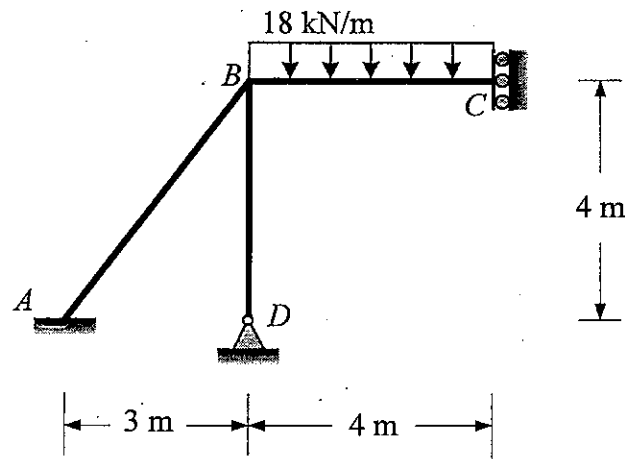


Fig. 4