

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

1. A uniform live load of 8 kN/m and a concentrated live load of 12 kN act on the stringers shown in Fig. 1. Determine (a) the maximum tension in member BH and (b) the maximum compression in member BC of the truss. (25%)

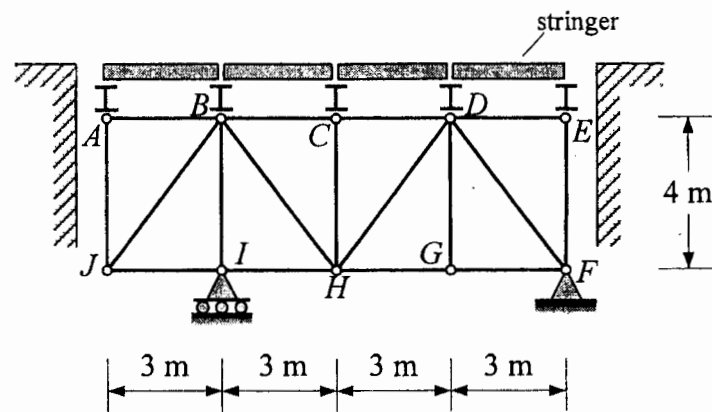


Fig. 1

2. Use the conjugate-beam method to determine the slope at point C of the beam shown in Fig. 2. The flexural rigidity EI for the beam is constant and the spring has a stiffness of $k = 3EI/L^3$. (25%)

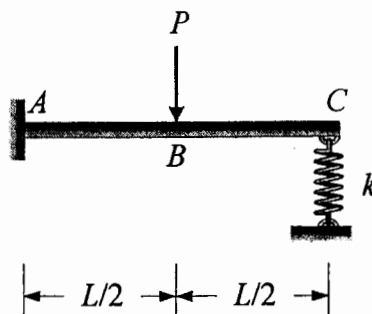


Fig. 2

(背面仍有題目,請繼續作答)

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3. Use the method of consistent deformations to determine the moment at the support A of the frame shown in Fig. 3, and then find the horizontal deflection at A . The flexural rigidity EI is constant throughout the entire frame. (25%)

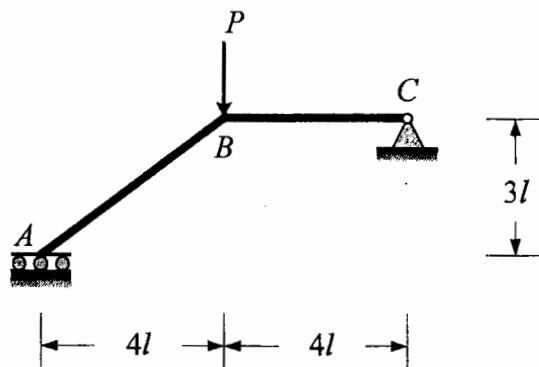


Fig. 3

4. Use the slope-deflection method to determine the angles of rotation at joints B and C of the frame shown in Fig. 4, and then find the forces acting at both ends of member AB . EI is constant. (25%)

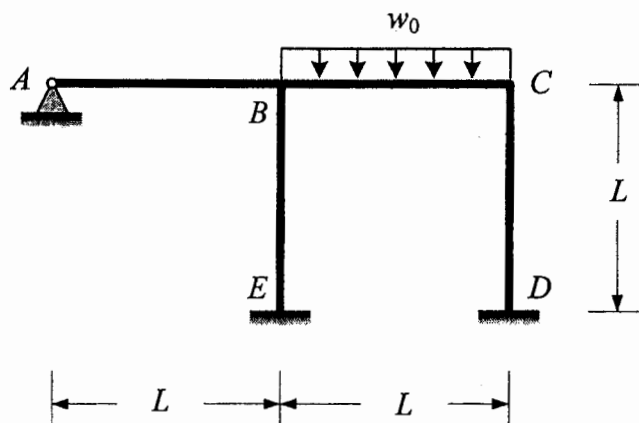


Fig. 4