

本試題是否可以使用計算機: ☒ 可使用, ☐ 不可使用 (請命題老師勾選)

1. If the allowable normal stress for the bar in Fig. 1 is $\sigma_{allow} = 21$ ksi, determine the maximum axial force P that can be applied to the bar. The bar has a width of 2 in. and thickness of 0.125 in. The hole in the bar has a diameter of 0.75 in. You may use Fig. 2 to find the stress concentration factor K whose X-axis is the ratio of hole radius to bar width. (20%)

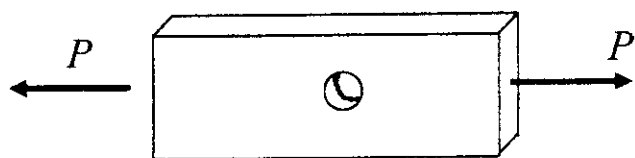


Fig. 1

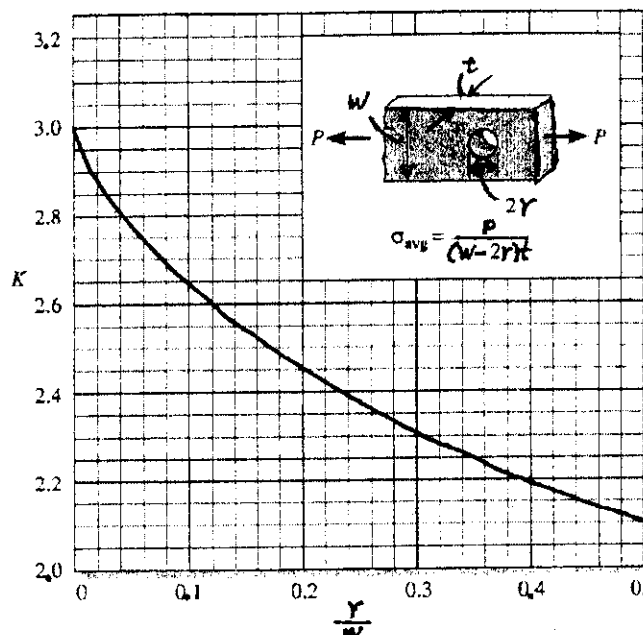


Fig. 2

2. Determine the deflection at B of the bar in Fig. 3. (20%)

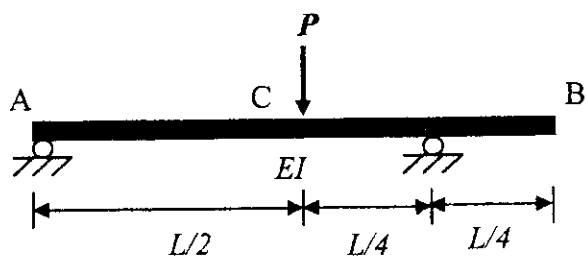


Fig. 3

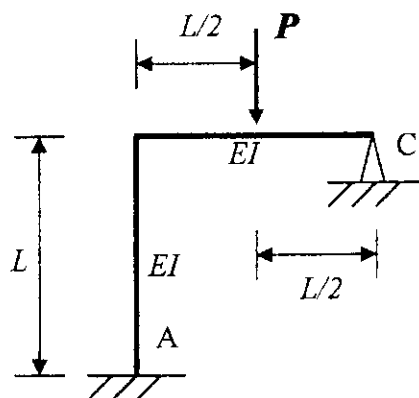


Fig. 4

3. Calculate the bending moment at joint A of the rigid frame in Fig. 4. (20%)
4. 試繪圖解釋折版系統用在屋頂時的優點及應注意的變形補強措施。(20%)
5. Describe the meaning of the following terms: (Chinese is acceptable.) (20%)
- | | |
|---------------------------------------|--------------------------------------|
| a) Compact Section (in steel design); | b) Residual Stress (in steel design) |
| c) 平衡鋼筋比 (in RC design); | d) Ultimate Stress Design |