

淡江大學九十學年度日間部轉學生招生考試試題

系別：土木工程學系三年級

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計算機	字典
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科目：工程力學(含靜力學、材料力學)

本試題共 / 頁

1. Draw the shear force and bending moment diagrams for the beam shown in Fig. 1
20%
2. A cantilever beam AB with a uniform load of intensity q acting on the right-hand half of the beam is shown in Fig. 2. Use the moment-area method to find the angle of rotation θ_B and deflection δ_B at the free end B. (flexural rigidity $=2EI$ on section AC, and flexural rigidity $=EI$ on section CB)
20%
3. (a) Determine the components of the forces acting on each member of the frame shown in Fig. 3 10%
(b) Determine the internal forces in member ABE at point J. 10%
4. A beam of T-section is supported and loaded as shown in Fig. 4. The cross section has width $b = 2.5$ in, height $h = 3$ in., and thickness $t = 0.5$ in.
Determine the maximum tensile and compressive stresses in the beam. 20%
5. Explanations: 20%
 - (a) Frame
 - (b) Two-force member
 - (c) Linear elasticity
 - (d) Yield stress

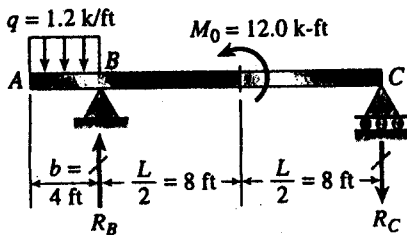


Fig. 1

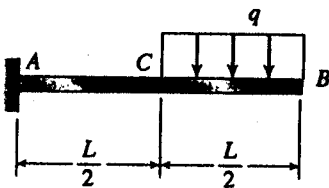


Fig. 2

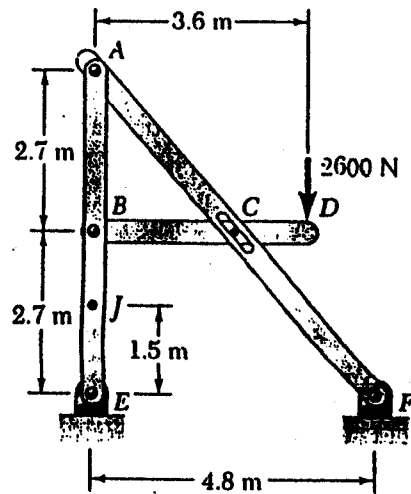


Fig. 3

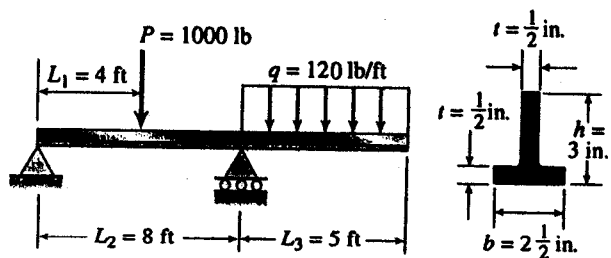


Fig. 4