

淡江大學 103 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

科目：工程力學(含靜力學、材料力學)

考試日期：7月20日(星期日) 第3節

本試題共 4 大題， 1 頁

每題 25%

- (a) Draw the shear and bending-moment diagrams for the beam and loading shown in Fig. 1.
(b) Write the equations of shear and bending-moment for section AB of the beam

- Find the reactions and forces in members CF and EF of the truss shown in Fig. 2.

- A beam having a cross section in the form of an unsymmetric side-flange shape as shown in Fig. 3. Locate the centroids of the plane area ($a=?$) and determine the moment of inertia of the area about the centroidal z axis ($I_z=?$).

- A beam having the cross-sectional dimensions as shown in Fig. 3 is subjected to a shear force of 1000 kN and a negative bending moment of 120 kN-m.

- Determine the maximum tensile and compressive stresses in the beam
- Determine the maximum and minimum shear stresses in the web of the beam

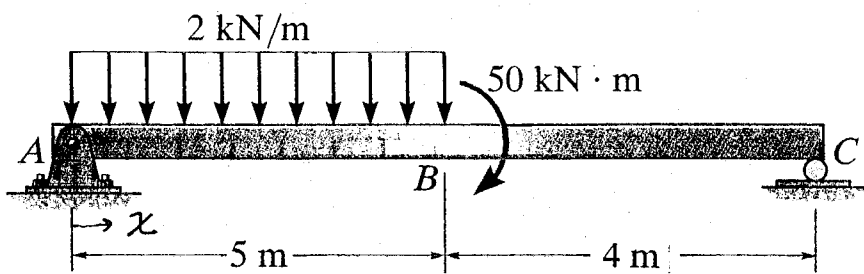


Fig. 1

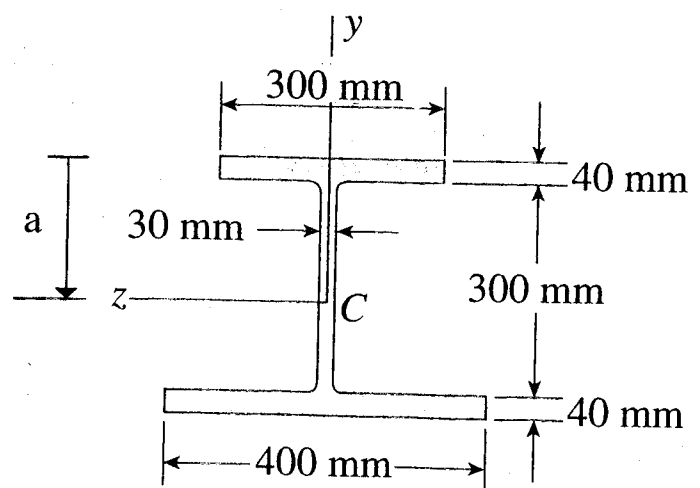


Fig. 3

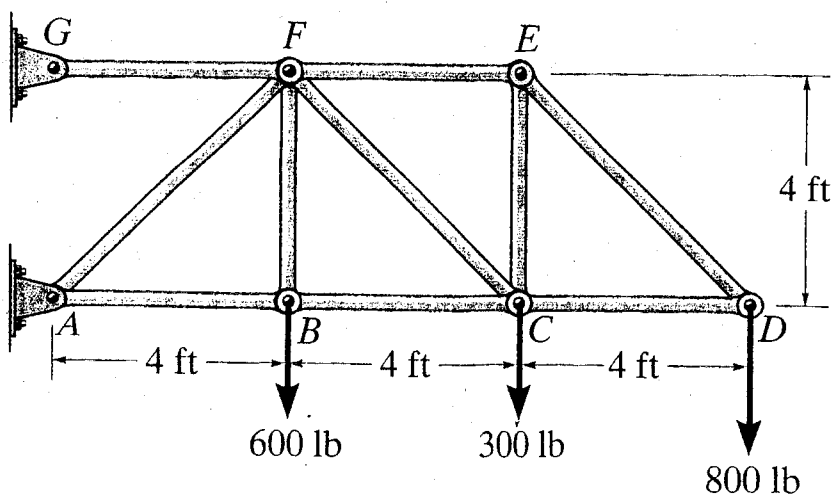


Fig. 2