淡江大學 97 學年度碩士班招生考試試題

系別：土木工程學系　　　　　科目：結　　構　　學

准帶項目請打「V」	
V	簡單型計算機

本試題共 壹 頁，肆 大題

[1]. Calculate the axial force of member BH, CH and HF of the truss with 8 joints in Fig. 1.　Support A is a hinge, support F is a roller.　(15%)

[2]. Analyze the frame shown in Fig.2. Use slope deflection method or consistent deformation method only. Draw the bending moment diagram. (35%)

[3]. Analyze the frame shown in Fig.3. Use moment distribution method or direct stiffness method only. Draw the bending moment diagram. (15%)

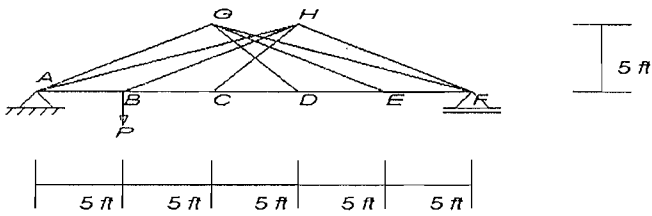[4]. Solve the problem shown in Fig.4. Use matrix displacement method only. Draw the bending moment diagram. (35%)

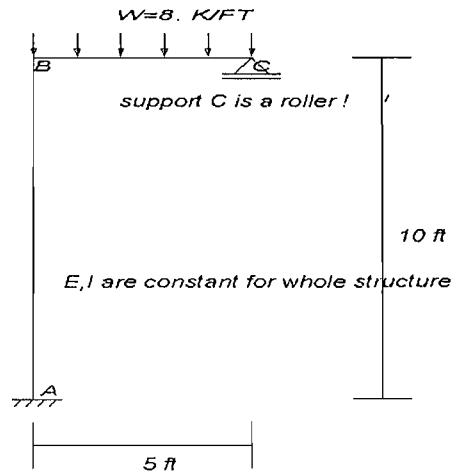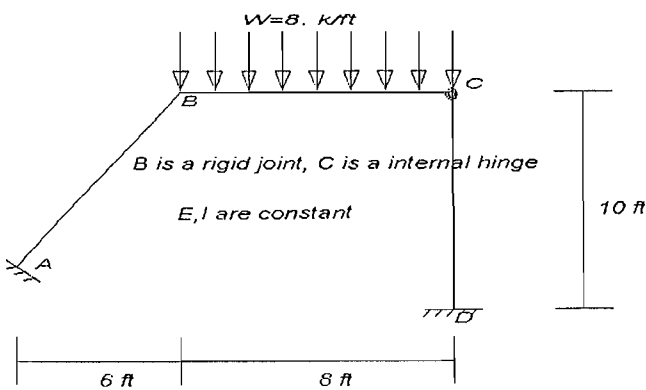Fig.1　Truss Structural Data
All joints are PIN joint

W=8. K/FT

support C is a roller!

5 ft

10 ft

E,I are constant for whole structure

5 ft

Fig.2　Frame Structural Data

W=8. k/ft

B is a rigid joint, C is a internal hinge

E,I are constant

10 ft

6 ft　　8 ft

Fig.4　Frame Structural Data

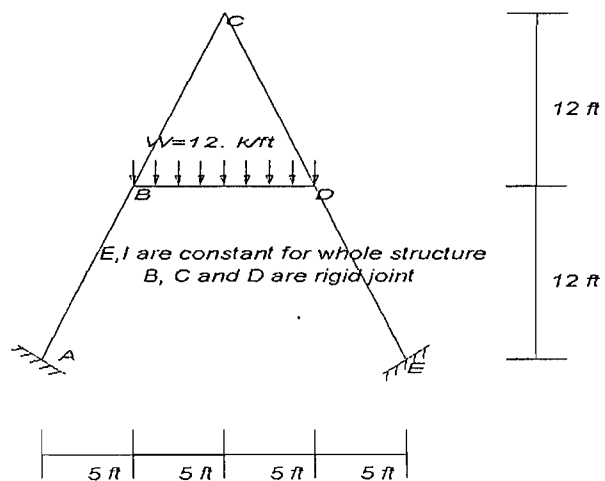W=12. k/ft

E,I are constant for whole structure
B, C and D are rigid joint

12 ft

12 ft

5 ft　5 ft　5 ft　5 ft

Fig.3　Frame Structural Data