



Dept. of Civil Eng.
Faculty of Engineering
Assiut University
2nd Semester – Evaluation
2019/2020 - June 2020

Const. Eng. & P. M. Program
Theory of Structures-3 (CVE3119)
3rd level
Course Evaluation
Marks: 100



	اسم الطالب
	الرقم الأكاديمي
نظرية إنشاءات-٣	اسم المقرر
الثالث	المستوى
التحليل الإنشائي للمنشآت الغير المحددة استاتيكيًا	عنوان البحث المرجعي

التوقيع	الدرجة	رقم السؤال
		السؤال الأول
		السؤال الثاني
		السؤال الثالث
		السؤال الرابع
		السؤال الخامس
		السؤال السادس
		المجموع

توقيع لجنة الامتحان

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+اللجنة

Problem (1) (25 marks)

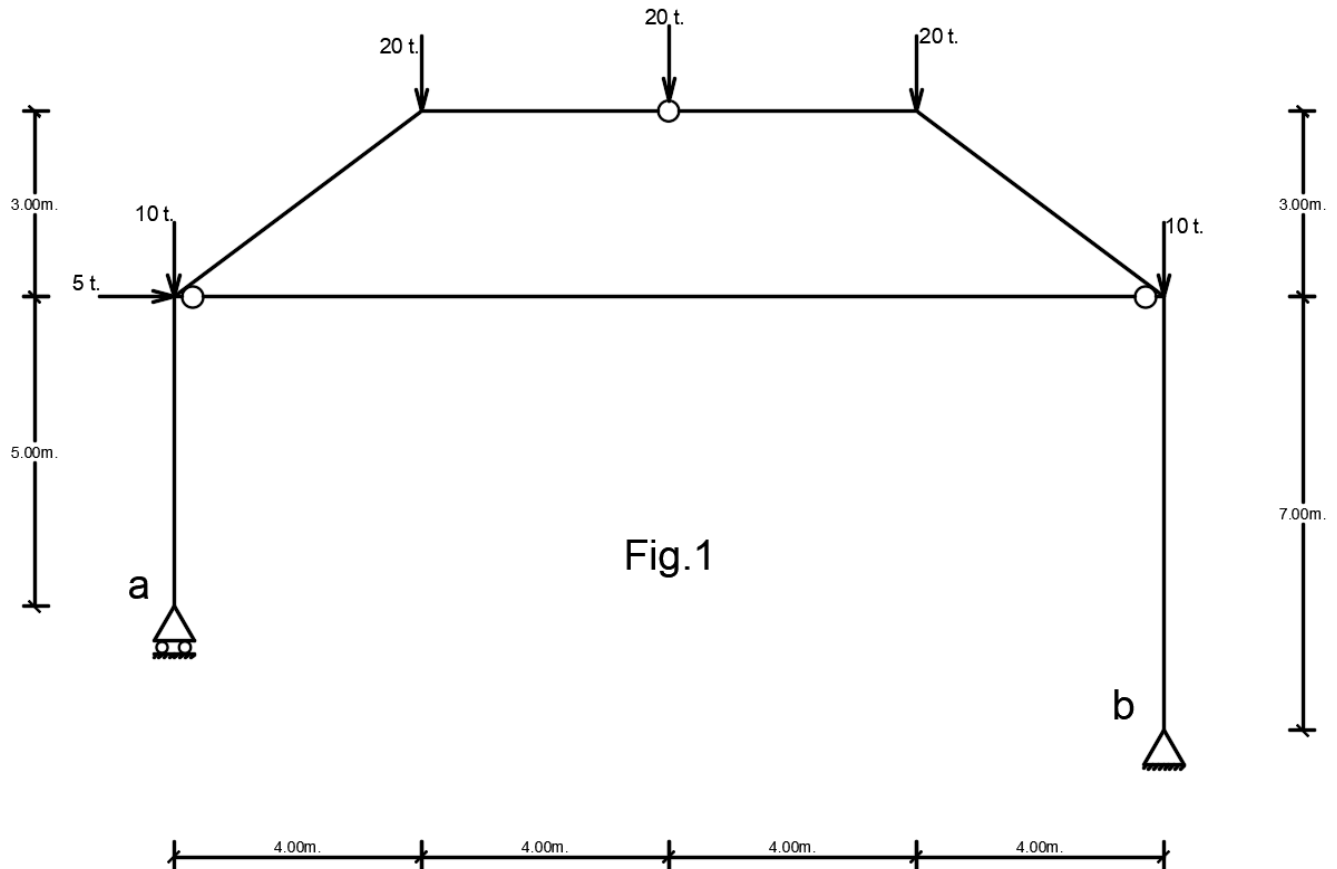


Fig.1

For the frame shown in figure 1. Compute the horizontal displacement at roller support a due to:

- The given loads.
- Settlement at b 3cm. ↓
- Uniform rise of temperature 60° C.
 $\alpha = 1 \times 10^{-5}/^{\circ}\text{C}$, $EI = 20000 \text{ m}^2 \cdot \text{t}$, $(EA)_{\text{link}} = 80000 \text{ t}$.

Problem (2) (25 marks)

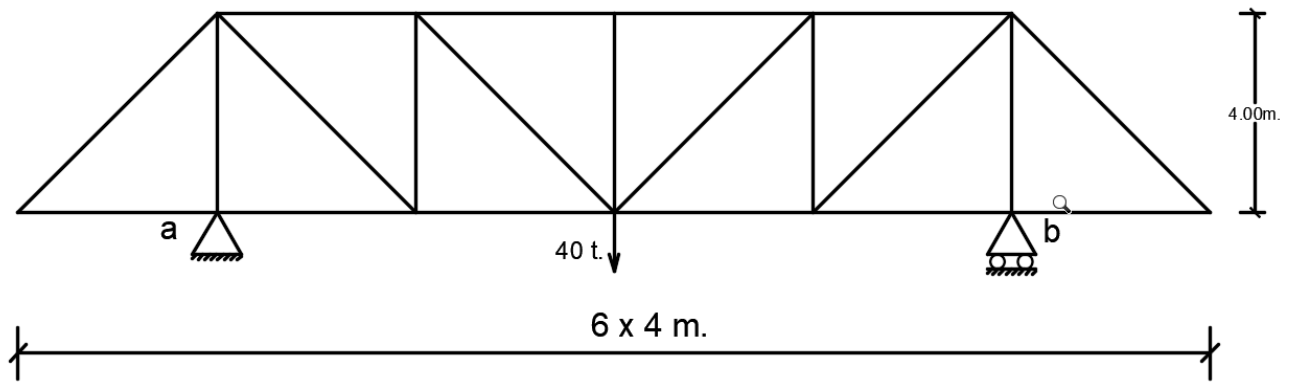
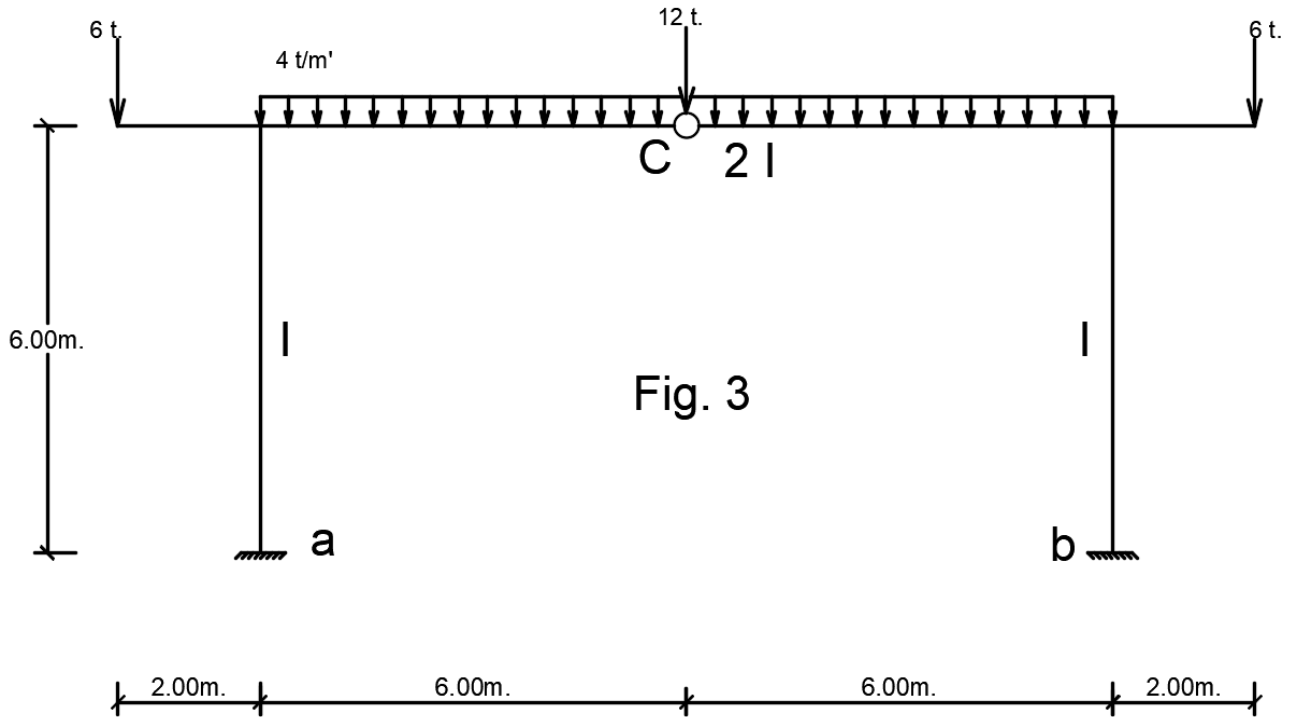


Fig. 2

For the shown truss in figure 2

- calculate the vertical displacement at joint c due to the given load.
- If it is required to produce 10 cm camber at joint c by fabricating each of the top chord members longer by (a) and each of the bottom chord members shorter by the same amount. What will be the associated displacement at roller b?
($L/EA = 0.005 \text{ cm/t.}$)

Problem (3). (25 marks)



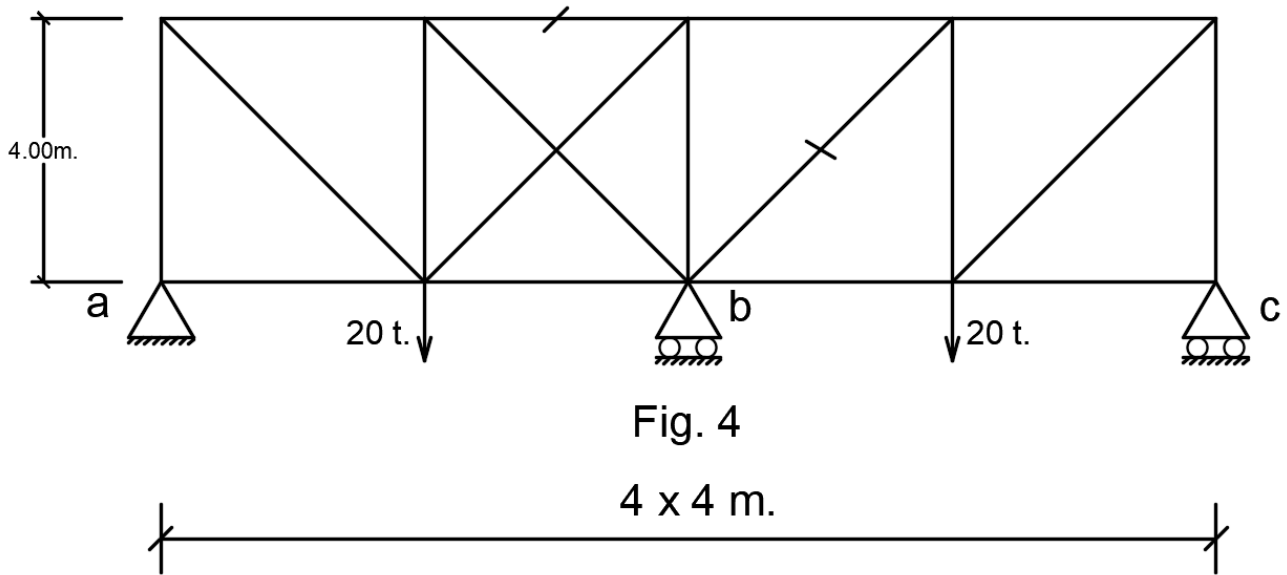
For the frame shown in figure 3 draw the bending moment diagram due to:

- Given loads
- Uniform rise of temperature 40°C .

Also calculate the vertical deflection at C due to the given loads.

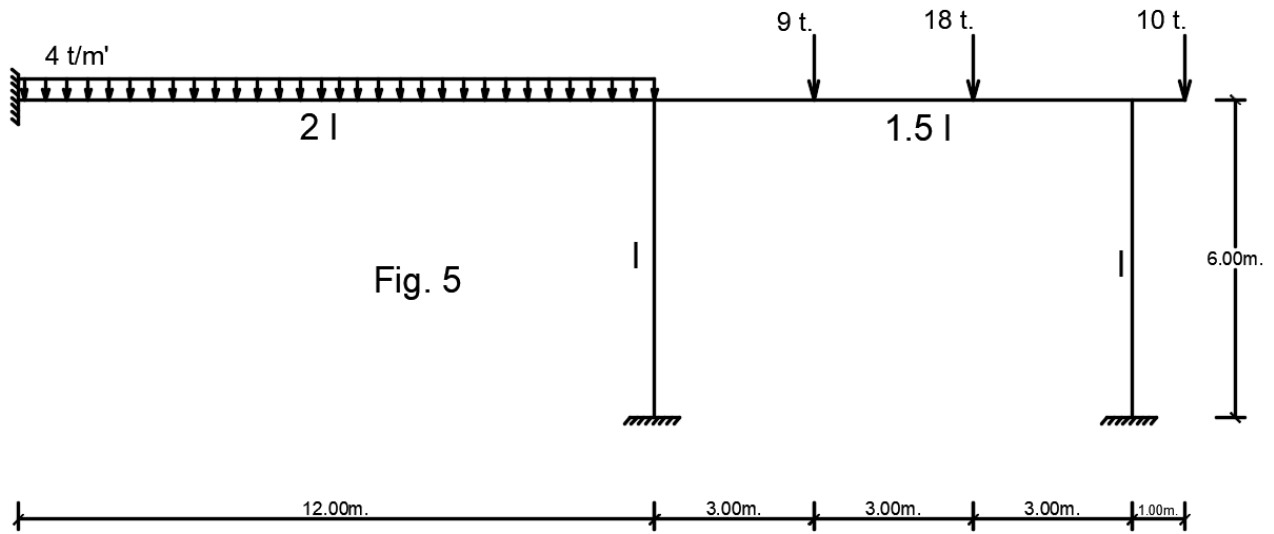
$EI = 20000 \text{ m}^2\text{t.}, \alpha = 1 \times 10^{-5}/^{\circ}\text{C}$.

Problem (4) (10 marks)



For the twice statically indeterminate truss shown in figure 4, calculate the reactions and the force in the marked members due to the applied loads.

Problem (5) (10 marks)



For the frame shown in figure 5 draw the B.M.D, S.F.D. and N.F.D using Slope-Deflection Method.

Problem (6) (10 marks)

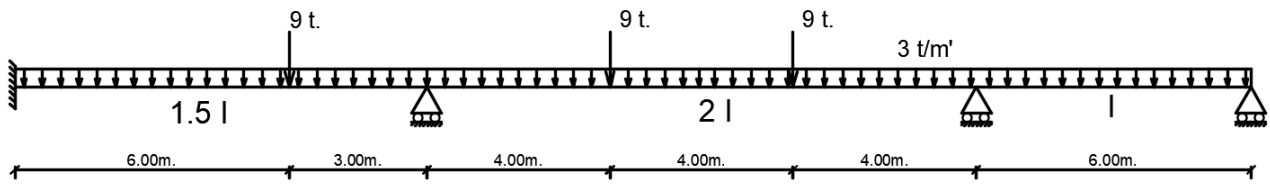


Fig. 6

For the continuous beam shown in figure 6, draw the B.M.D and S.F.D using the moment distribution method.

