

Remarks: See § 7.3, pages 504 to 513

Answer

a)

Member	Forces(in terms of F)	ΔL (mm)
1	$\sqrt{5}$	$\sqrt{5}$
2	1	2
3	$\sqrt{5}/2$	$\sqrt{5}$
4	$\sqrt{5}/2$	$\sqrt{5}$
5	$-\sqrt{5}/2$	$-\sqrt{5}$
6	$\sqrt{5}/2$	$\sqrt{5}$
7	-0.5	-2
8	0.5	2

b) Assuming the direction of AG is fixed and removing the support at B:

Joint	u_x (mm)	u_y (mm)
A	0	0
B	12	12
C	-8	-0.5
D	-6	-0.5
E	0	-7
G	-2	0

c) The truss should be rotated $2 \cdot 10^{-3}$ radians anti-clockwise ($\frac{12 \cdot 10^{-3}}{6}$)

Joint	u_x (mm)	u_y (mm)
A	0	0
B	-12	-12
C	-6	-9
D	-6	-3
E	0	-12
G	0	-6

d) Combined displacements:

Joint	u_x (mm)	u_y (mm)
A	0	0
B	0	0
C	-14	-9.5
D	-12	-3.5
E	0	-19
G	-2	-6