

Remarks: See § 7.3, pages 504 to 513

Answer

a)

Member	Sign	ΔL (mm)
1	-	$-\sqrt{2}$
2	+	1
3	+	$\sqrt{2}$
4	-	-1
5	+	$\sqrt{2}$
6	+	1
7	-	$-\sqrt{2}$

b) Freeing the roller constraint at B and fixing the direction AC:

Joint	u_x (mm)	u_y (mm)
B	2	12
C	1	0
D	-1.5	-0.5
E	-2.5	5.5

c) The truss should be rotation $1.5 \cdot 10^{-3}$ radians clockwise ($\frac{12 \cdot 10^{-3}}{8}$)

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

d) Combined displacements:

Joint	u_x (mm)	u_y (mm)
B	2	0
C	1	-6
D	1.5	-3.5
E	-0.5	-3.5