## **ANSWERS - VOLUME2: STRESSES, STRAINS, DISPLACEMENTS**

problem 7.051, page 536

Remarks: See § 7.3, pages 504 to 513

## Answer

a)

,			
Member	Sign	$\Delta L  (\text{mm})$	
1	_	-6	
2	-	$-6\sqrt{2}$	
3	+	6	
4	-	$-6\sqrt{2}$	
5	+	6	
6	-	-2	

Assuming the direction of AB is fixed and removing the support at E:

Joint	$u_x$ (mm)	$u_y$ (mm)
A	0	0
В	0	-6
C	6	-12
D	-6	-18
Е	8	16/3

b) The truss should be rotated  $0.666 \cdot 10^{-3}$  radians anti-clockwise  $(\frac{8 \cdot 10^{-3}}{12})$ 

Joint	$u_{x}(mm)$	$u_y$ (mm)
A	0	0
В	-4	0
C	-8	-4
D	-4	-4
Е	-8	16/3

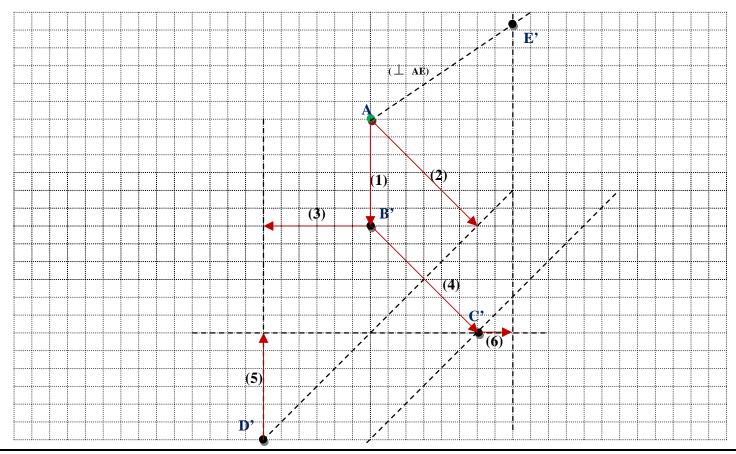
c) Combined displacements:

Joint	$u_x(mm)$	$u_y$ (mm)
A	0	0
В	-4	-6
C	-2	-16
D	-10	-22
Е	0	0

Last update:09-02-08

Work out:

a) Scale: 1 square = 1mm



Last update:09-02-08