1. If the end displacements of member 2 of the beam shown in the figure are
$\mathbf{u}_{2}=\left[\begin{array}{c}-0.02532 \mathrm{~m} \\ -0.00434 \mathrm{rad} \\ -0.02532 \mathrm{~m} \\ 0.00434 \mathrm{rad}\end{array}\right]$
calculate the end forces for the member. Is the member in equilibrium under these forces?
Ref: A. Kassimalı, Matrix Analysis of Structures, 2nd Ed.

2. Determine the reactions and the members end forces for the beam shown in the figure by using the matrix stiffness method.

Ref: A. Kassimalı, structural Analysis,4th Ed.


$$
E=200 \mathrm{GPa}
$$

3. For the beam subjected to the linearly varying line load w shown in figure, Determine the rightend rotation and the reactions. Assume EI constant throughout the beam.

Ref: The First Course in the Finite Element, D. L. Logan, 4th Edition.


