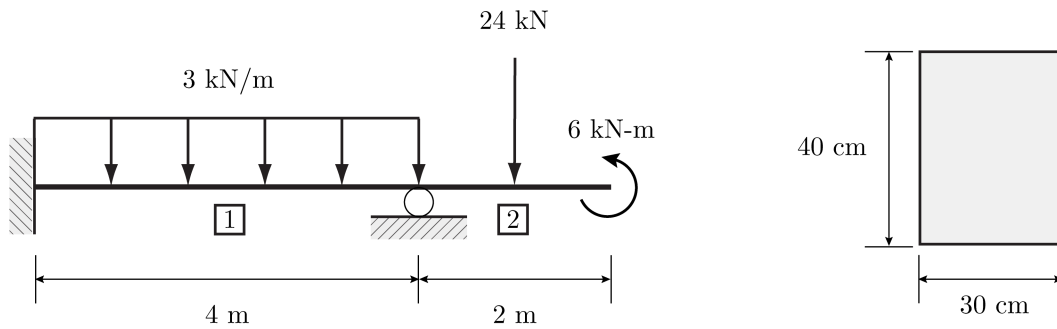


CE 525 Fall 2026 HW#3

Due Thursday, October 8, by the beginning of class

1. For the beam shown below determine joint displacements/rotations, support reactions, and shear force / bending moment diagrams using the Matrix Displacement Method:



$E = 20 \text{ GPa}$; $G = 7.5 \text{ GPa}$ for all members

- (10 pts) By hand & programming using Bernoulli-Euler Beam Theory (EBT)
- (5 pts) Using SAP2000 (neglecting shear deformation)
- (10 pts) By hand & programming using Timoshenko Beam Theory
- (5 pts) Using SAP2000 (including shear deformation)
- (5 pts) Compare/comment on the results in a,b with c,d