1. Obtain the flexibility matrix for the grid structure shown below. Consider both flexural and torsional deformations, but ignore axial deformations. Use the reactions at support C as the redundants. Assume $Q_1$ is the force in the positive y direction. Assume $Q_2$ is the positive bending moment in the direction of the positive x axis. Finally $Q_3$ is the torsional moment in the direction of the positive z axis. The flexural and torsional stiffnesses are $EI$ and $GJ$, respectively.
2. Find the joint displacements and reactions for the continuous beam shown below. This was an in class problem. Assume the distributed load is such that

\[ wL = P \]

The beam has constant flexural rigidity EI. The four joint displacements and four reactions and four reactions should be numbered consecutively from left to right in the figure. Use the value of the redundants found in class.