1) A beam shown in Figure 1 has a cross-sectional area of 10.3 in$^2$ and a depth of 17.7 in. Its second moment of area is 510 in$^4$ and its modulus of elasticity is $E = 29 \times 10^6$ lb/in$^2$. The beam is subjected to a uniformly distributed load of 2000 lb/ft. Use Matlab to solve for the displacements and the reaction forces/moments at the three nodes.

[Diagram of uniformly loaded beam]

**Figure 1.** Uniformly loaded beam.

2) A lamp frame shown in Figure 2 has a hollow, square cross-section and is made from steel ($E = 29 \times 10^6$ lb/in$^2$). Use Matlab to solve for the displacement of the endpoint where the 40 lb lamp is attached.

[Diagram of lamp post]

**Figure 2.** Lamp post.