

Name:

Exam 2 - version B

1. (25 pts.)

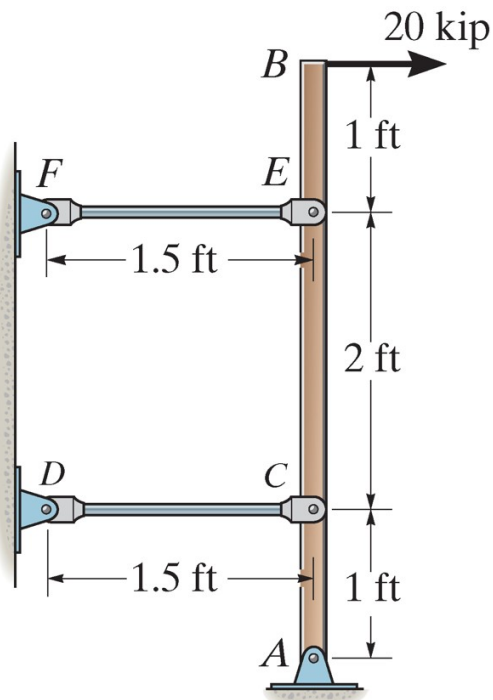


Figure 1: Problem 1

A rigid bar is pinned at A and supported by two rods, one aluminum ($E_{al} = 10 \text{ Msi}$), and one steel ($E_{st} = 30 \text{ Msi}$). Both have a 1 in diameter.

- Using your own judgement, which bar (FE and DC) should be steel?
- Solve for the forces in the two bars (FE and DC)
- Was your initial assumption accurate?

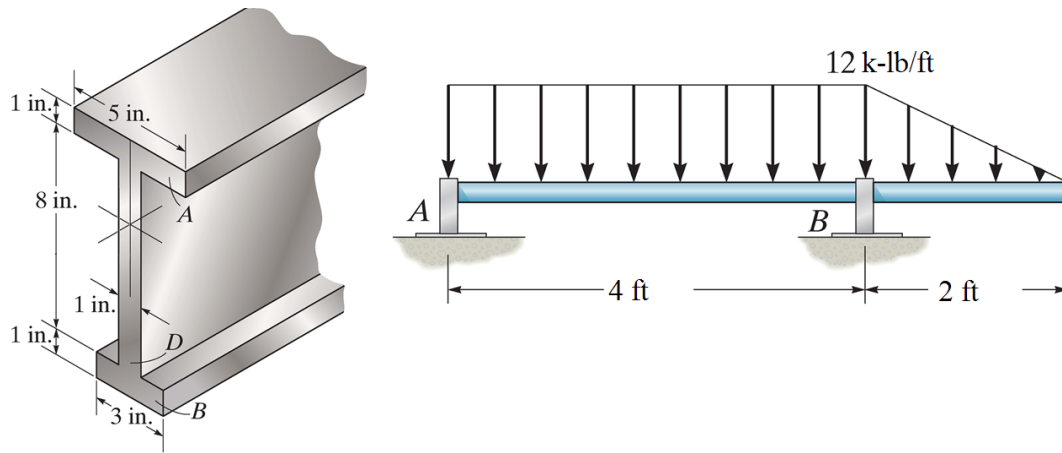


Figure 2: Beam loading and cross-section for problems 2-3

2. (35 pts.) For the beam shown in Figure 2 find the maximum tensile stress and the point at which it occurs.

3. (40 pts.) For the beam shown in Figure 2 find the maximum transverse shear stress and the point at which it occurs.

