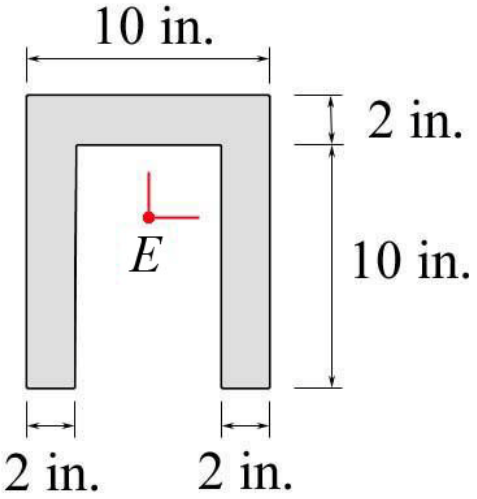
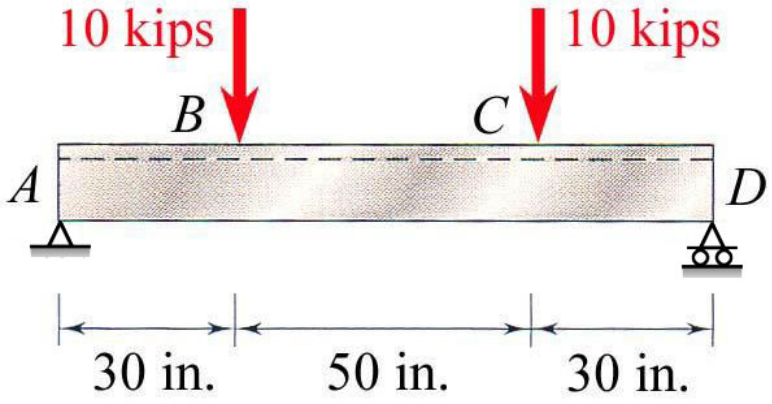
MEEG 3013 Quiz #4.m11.072

Two vertical forces are applied to a beam of the cross section shown, where E is its centroid. Determine (a) the distance $\overline{y}$ between E and the bottom of the cross section, (b) the maximum tensile stresses in portion BC of the beam. (c) the maximum compressive stresses in portion BC of the beam.





(a) $\overline{y} = 7$ in. ②

$I = 820$ in^4 ② $M_{BC} = 300 \times 10^3$ lb·in. ②

(b) $\sigma_{max} = +2.56$ ksi ②

(c) $\sigma_{max} = -1.829$ ksi ②