1335. The T section shown in Fig. P-1335 is the cross section of a simply supported beam 16 ft long that carries a central concentrated load inclined at 60° to the y axis. The centroidal x axis is 3.07 in. below the top of the section; $I_x = 112.6\text{ in.}^4$ and $I_y = 18.7\text{ in.}^4$ If $\sigma_c \leq 12\,000$ psi and $\sigma_t \leq 5000$ psi, what is the maximum load that will not overstress the beam?

Ans. $P = 803$ lb

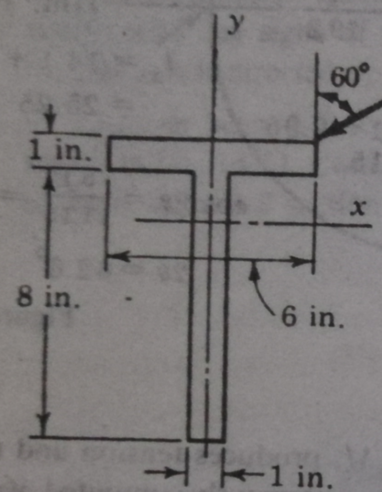


Figure P-1335

1336. A cantilever beam 10 ft long with the same T section as in Prob. 1335 carries two concentrated loads applied as shown in Fig. P-1336. Compute the inclination of the neutral axis at the wall, and the maximum compressive and tensile stresses.

Ans. $\alpha = 70.1°$; max. $\sigma_c = 11.9$ ksi; max. $\sigma_t = 18.5$ ksi

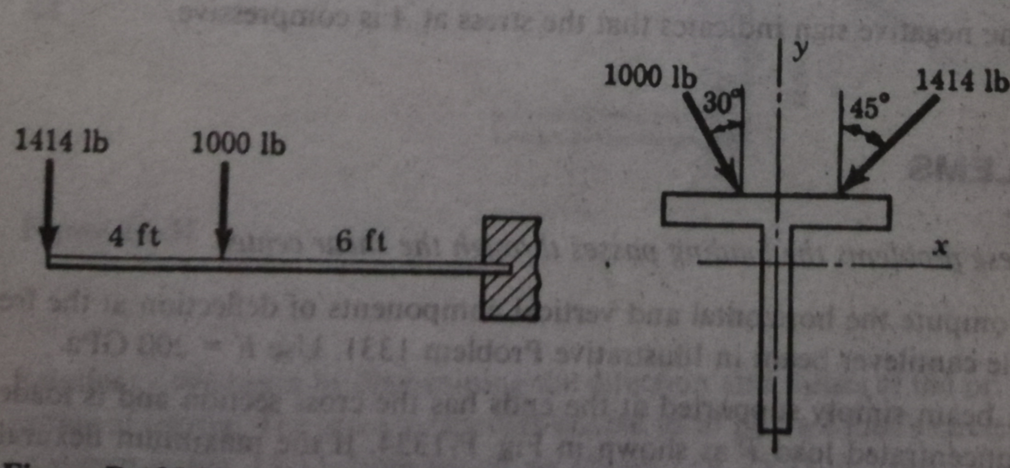


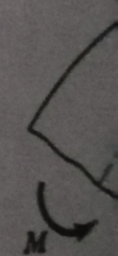
Figure P-1336

1338. A 200 × 100 × 20 mm ... mm leg vertical. It supp... Compute the maximum ... to determine the point ...

13-10 CURVED BEAM...

Members subjected to bend... of crane hooks, they are c... member is sharply curved, ... given by the flexure formu... initially straight.

For example, a sharp... shown in Fig. 13-33. It is us... after bending. Although no...



agree closely with actual str... tion, bending causes sectio... position. Consequently, the ... surface, will have equal de... $\delta = \sigma L/E$, we have