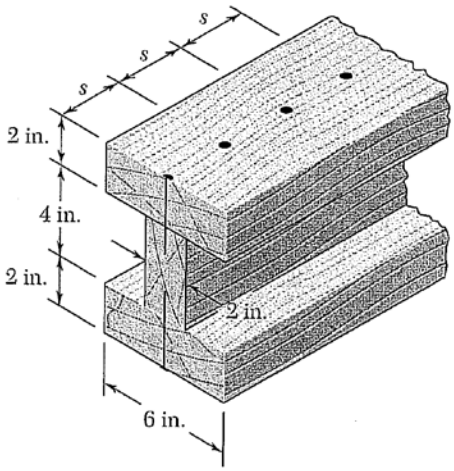

Fig. P6.3 and *P6.4*

6.3 Three boards, each 2 in. thick, are nailed together to form a beam that is subjected to a vertical shear. Knowing that the allowable shearing force in each nail is 150 lb, determine the allowable shear if the spacing s between the nails is 3 in.

6.9 through 6.12 For the beam and loading shown, consider section n-n and determine (a) the largest shearing stress in that section, (b) the shearing stress at point a.

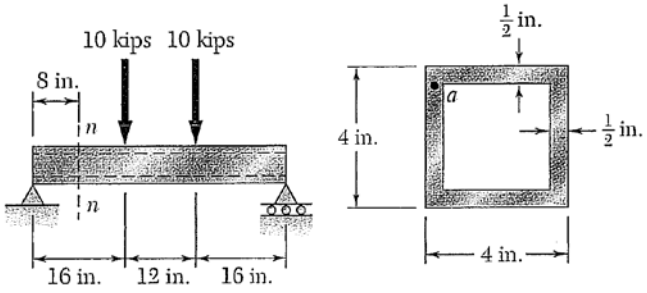

Fig. P6.12

6.23 and 6.24 For the beam and loading shown, determine the largest shearing stress in section n-n.

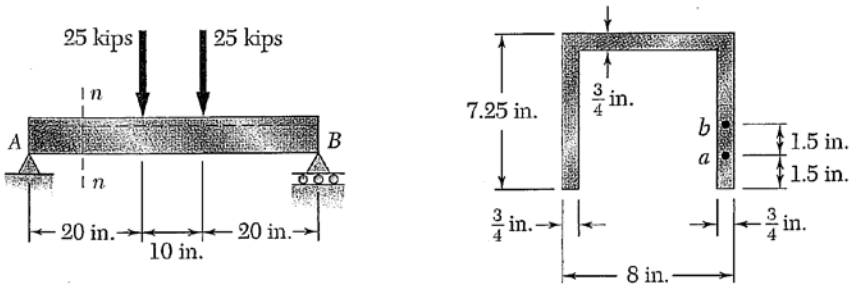

Fig. P6.22 and P6.24

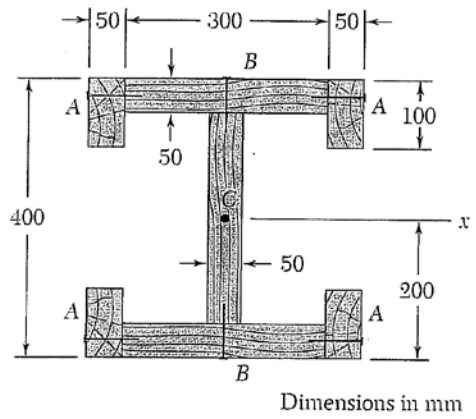

Fig. P6.32

6.32 The built-up wooden beam shown is subjected to a vertical shear of 8 kN. Knowing that the nails are spaced longitudinally every 60 mm at *A* and every 25 mm at *B*, determine the shearing force in the nails (*a*) at *A*, (*b*) at *B*. (*Given:* $I_x = 1.504 \times 10^9$ mm^4.)

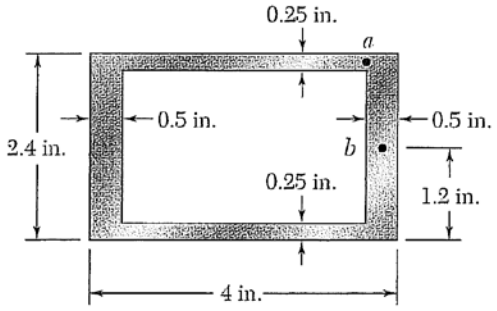

Fig. *P6.36*

6.36 An extruded aluminum beam has the cross section shown. Knowing that the vertical shear in the beam is 10 kips, determine the shearing stress at (*a*) point *a*, (*b*) point *b*.

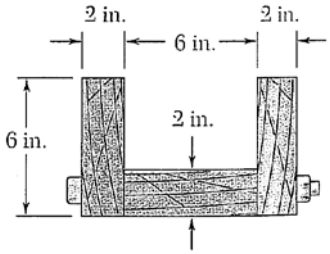

Fig. P6.44

6.44 A beam consists of three planks connected as shown by $\frac{3}{8}$-in.-diameter bolts spaced every 12 in. along the longitudinal axis of the beam. Knowing that the beam is subjected to a 2500-lb vertical shear, determine the average shearing stress in the bolts.