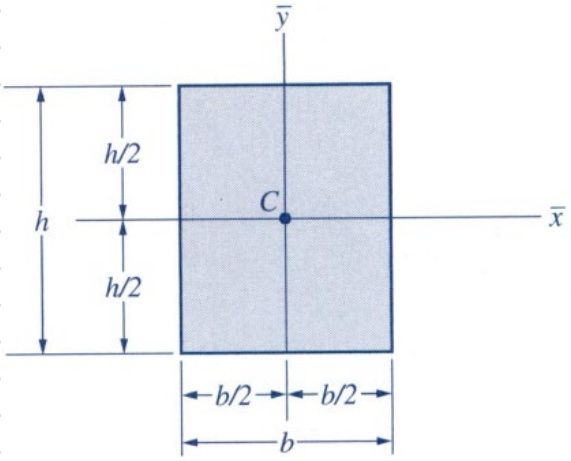
8-1. Refer to Fig. P8-1. Verify that the radii of gyration $\overline{r}_x$ and $\overline{r}_y$, of the rectangle shown with respect to its centroidal axes are $\bar{r}_x = h/\sqrt{12}$ and $\bar{r}_y = b/\sqrt{12}$.

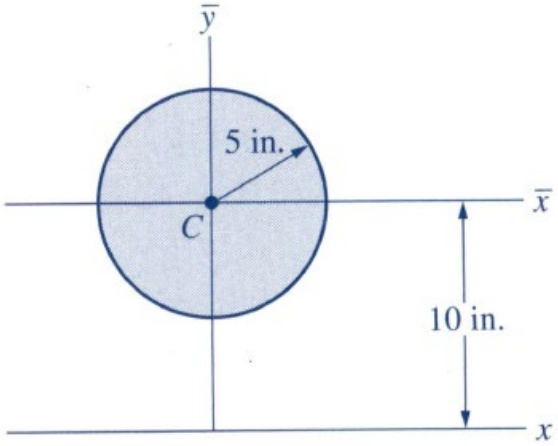
Solution.



8-2. Verify that the radius of gyration for a circle of diameter d with respect to a centroidal axis is $\bar{r} = d / 4$.
Solution.

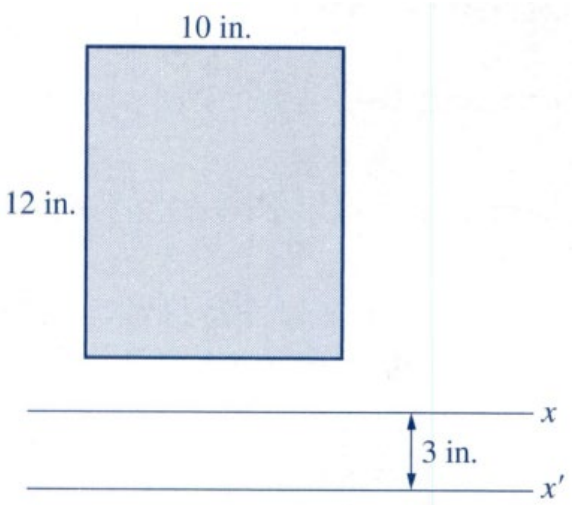
8-3. Refer to Fig. P8-3. Determine the moment of inertia I_x and the radius of gyration r_x of the circular area about the x axis.

Solution.



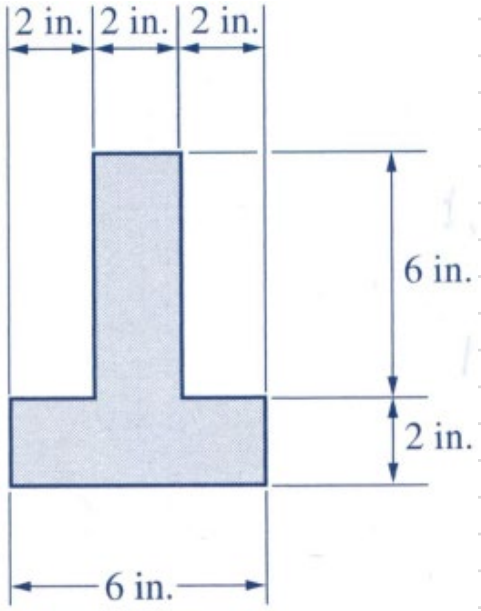
8-6. Refer to Fig. P8-6. If the moment of inertia I_x of the rectangular area about the x axis is 7320 in.^{4}, determine I_x, of the area about the x' axis.

Solution.



8-10. 8-10 to 8-17 For each composite area shown in Figs. P8-10 to P8-17, determine the moment of inertia of the area with respect to the horizontal centroidal axis.

Solution.



8-16.
Solution.