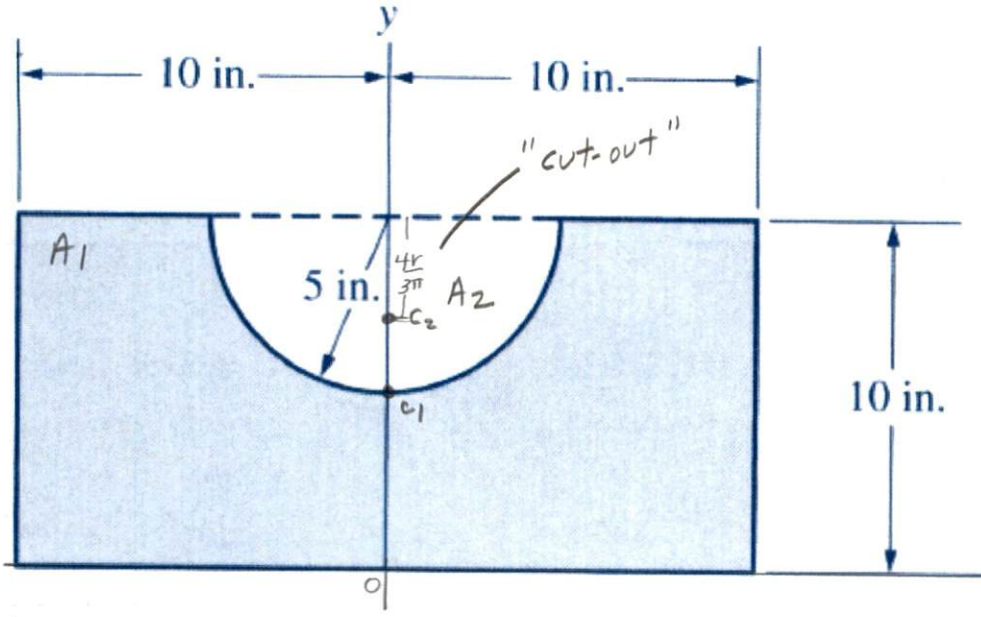
7-17.

Solution.

The shape (area) is symmetric about the y-axis, therefore the centroid must lie on the y-axis and $\bar{x} = 0$.



Shape	Area (in^2)	y (in)	Ay (in^3)
A_1	$10(20) = 200$	5	1000
A_2	$-\frac{1}{2}\pi(5)^2 = -39.3$	$5 + \left(5 - \frac{4(5)}{3\pi}\right)$ (2.88) $= 7.88$	−309.68
Σ	160.7		690.32

$\bar{x} = 0$ By Symmetry

$$\bar{y} = \frac{\Sigma Ay}{\Sigma A} = \frac{690.32\ in^3}{160.7\ in^2} = 4.3\ in$$

C (0, 4.3 in)