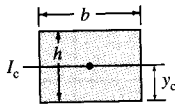
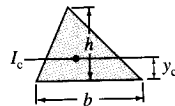
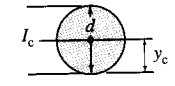
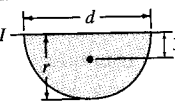
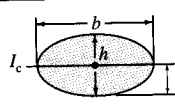
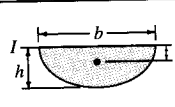
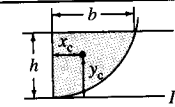
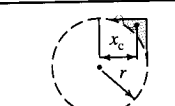
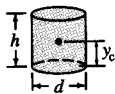

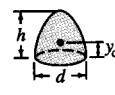

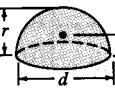


3

PROPERTIES OF AREAS AND VOLUMES

	Sketch	Area or Volume	Location of Centroid	I or I_c
Rectangle		bh	$y_c = \frac{h}{2}$	$I_c = \frac{bh^3}{12}$
Triangle		$\frac{bh}{2}$	$y_c = \frac{h}{3}$	$I_c = \frac{bh^3}{36}$
Circle		$\frac{\pi d^2}{4}$	$y_c = \frac{d}{2}$	$I_c = \frac{\pi d^4}{64}$
Semicircle ¹		$\frac{\pi d^2}{8}$	$y_c = \frac{4r}{3\pi}$	$I_c = \frac{\pi d^4}{128}$
Ellipse		$\frac{\pi bh}{4}$	$y_c = \frac{h}{2}$	$I_c = \frac{\pi bh^3}{64}$
Semiellipse		$\frac{\pi bh}{4}$	$y_c = \frac{4h}{3\pi}$	$I_c = \frac{\pi bh^3}{16}$
Parabola		$\frac{2}{3}bh$	$y_c = \frac{3h}{5}$ $x_c = \frac{3b}{8}$	$I_c = \frac{2bh^3}{7}$
Segment of Square			$x_c = \frac{2}{3} \frac{r}{4-\pi}$	

¹For the quarter-circle, the respective values are $\pi d^2/16$, $4r/3\pi$, and $\pi d^4/256$.

	Sketch	Area or Volume	Location of Centroid	I or I_c
Cylinder		$\frac{\pi d^2 h}{4}$	$y_c = \frac{h}{2}$	
Cone		$\frac{1}{3} \left(\frac{\pi d^2 h}{4} \right)$	$y_c = \frac{h}{4}$	
Paraboloid of revolution		$\frac{1}{2} \left(\frac{\pi d^2 h}{4} \right)$	$y_c = \frac{h}{3}$	
Sphere		$\frac{\pi d^3}{6}$	$y_c = \frac{d}{2}$	
Hemisphere		$\frac{\pi d^3}{12}$	$y_c = \frac{3r}{8}$	