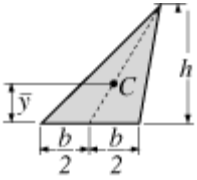
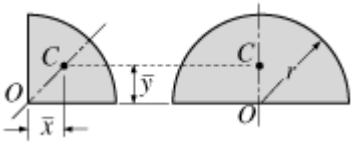
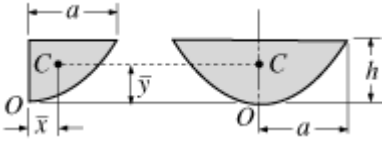
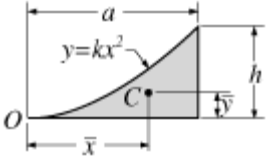
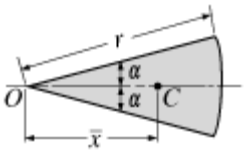
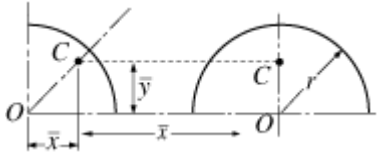
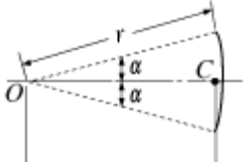
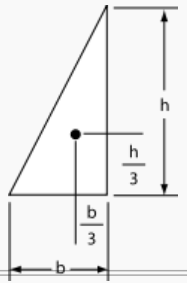
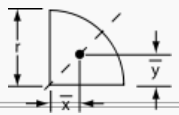
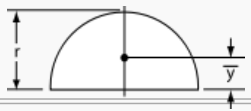
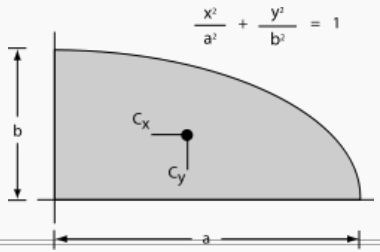
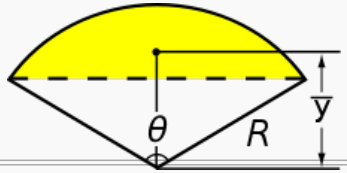
Centroids of Common Shapes

Shapes	Images	$\bar{x}$	$\bar{y}$	Area
Triangular Area			$\frac{h}{3}$	$\frac{bh}{2}$
Quarter–circular area		$\frac{4r}{3\pi}$	$\frac{4r}{3\pi}$	$\frac{\pi r^2}{3\pi}$
Semicircular area		0	$\frac{4r}{3\pi}$	$\frac{\pi r^2}{2}$
Semiparabolic area		$\frac{3a}{8}$	$\frac{3h}{5}$	$\frac{2ah}{3}$
Parabolic area		0	$\frac{3h}{5}$	$\frac{4ah}{3}$
Parabolic spandrel		$\frac{3a}{4}$	$\frac{3h}{10}$	$\frac{ah}{3}$

Circular Sector		$\frac{2r\sin\alpha}{3\alpha}$	0	ar^2
Quarter-circular arc		$\frac{2r}{\pi}$	$\frac{2r}{\pi}$	$\frac{\pi r}{2}$
Semicircular arc		0	$\frac{2r}{\pi}$	πr
Arc of circle		$\frac{r\sin\alpha}{\alpha}$	0	$2\alpha r$

Shape	Figure	$\bar{x}$	$\bar{y}$	Area
Triangular area		$\frac{b}{3}$	$\frac{h}{3}$	$\frac{bh}{2}$
Quarter-circular area		$\frac{4r}{3\pi}$	$\frac{4r}{3\pi}$	$\frac{\pi r^2}{4}$
Semicircular area		0	$\frac{4r}{3\pi}$	$\frac{\pi r^2}{2}$
Quarter-elliptical area		$\frac{4a}{3\pi}$	$\frac{4b}{3\pi}$	$\frac{\pi ab}{4}$
Semielliptical area	The area inside the ellipse $\frac{x^2}{a^2}+\frac{y^2}{b^2}=1$ and above the x axis	0	$\frac{4b}{3\pi}$	$\frac{\pi ab}{2}$
Semiparabolic area	The area between the curve $y=\frac{h}{b^2}x^2$ and the y axis, from $x=0$ to $x=b$	$\frac{3b}{8}$	$\frac{3h}{5}$	$\frac{2bh}{3}$
Parabolic area	The area between the curve $y=\frac{h}{b^2}x^2$ and the line $y=h$	0	$\frac{3h}{5}$	$\frac{4bh}{3}$

Parabolic spandrel	The area between the curve $y = \frac{h}{b^2}x^2$ and the x axis, from $x = 0$ to $x = b$	$\frac{3b}{4}$	$\frac{3h}{10}$	$\frac{bh}{3}$
General spandrel	The area between the curve $y = \frac{h}{b^n}x^n$ and the x axis, from $x = 0$ to $x = b$	$\frac{n+1}{n+2}b$	$\frac{n+1}{4n+2}h$	$\frac{bh}{n+1}$
Circular sector	The area between the curve (in polar coordinates) $r = \rho$ and the pole, from $\theta = -\alpha$ to $\theta = \alpha$	$\frac{2\rho\sin(\alpha)}{3\alpha}$	0	$\alpha\rho^2$
Circular segment		0	$\frac{4R\sin^3\frac{\theta}{2}}{3(\theta-\sin\theta)}$	$\frac{R^2}{2}(\theta - sin\theta)$
Quarter-circular arc	The points on the circle $x^2 + y^2 = r^2$ and in the first quadrant	$\frac{2r}{\pi}$	$\frac{2r}{\pi}$	$\frac{\pi r}{2}$
Semicircular arc	The points on the circle $x^2 + y^2 = r^2$ and above the x axis	0	$\frac{2r}{\pi}$	πr
Arc of circle	The points on the curve (in polar coordinates) $r = \rho$, from $\theta = -\alpha$ to $\theta = \alpha$	$\frac{\rho\sin(\alpha)}{\alpha}$	0	$2\alpha\rho$