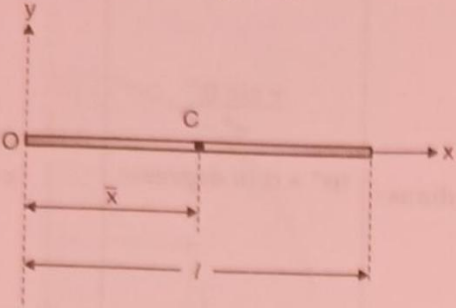
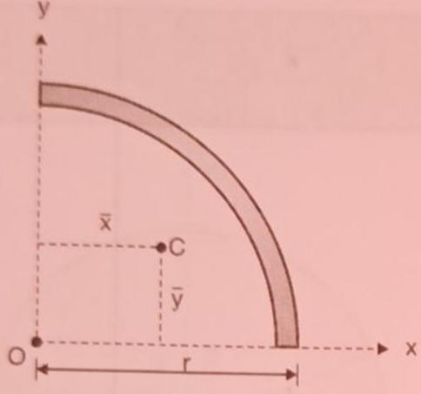
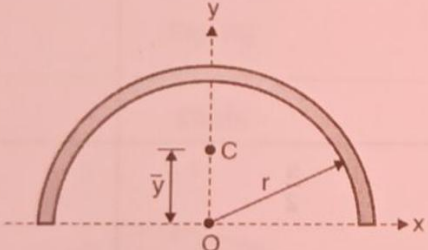
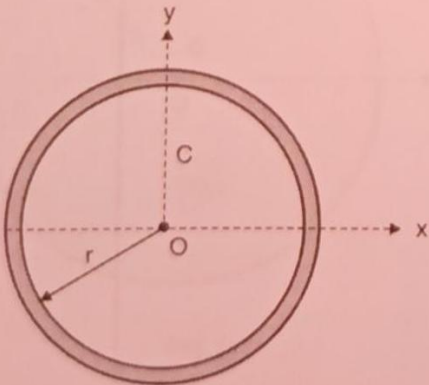
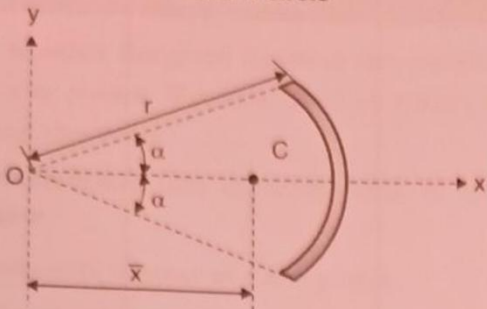
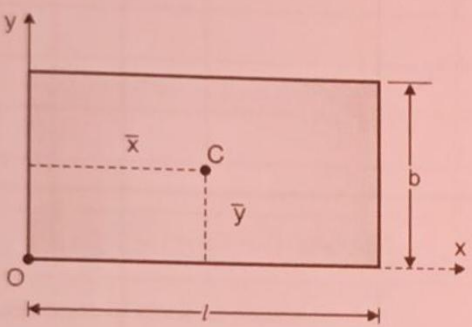
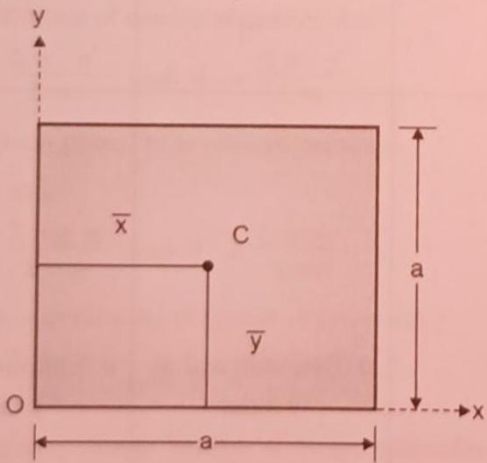


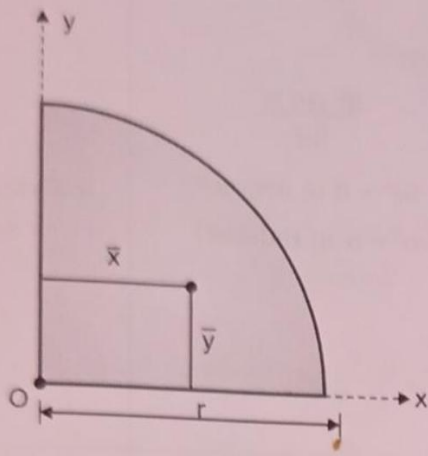
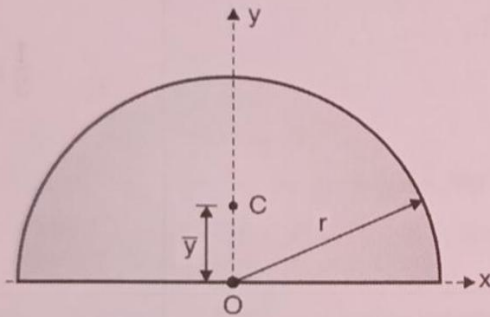
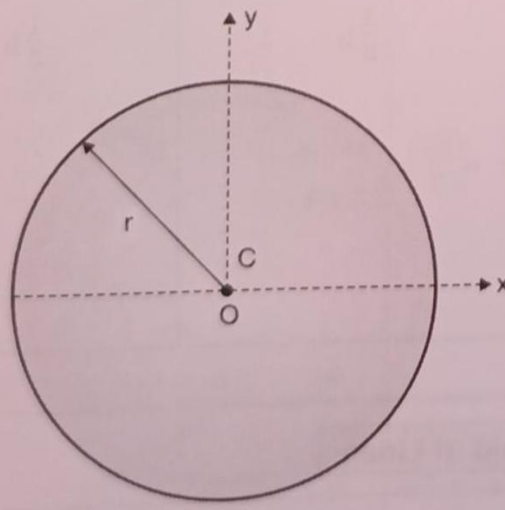
## 5.6 Centroid of Common Geometrical Shapes of Lines :

Sr. No.	Shape	Length ( $l$ )	$\bar{x}$	$\bar{y}$
1	<p><b>Straight line</b></p>  <p>Fig. (a)</p>	$l$	$\frac{l}{2}$	0 (Symmetrical at x-axis)
2	<p><b>Quarter Circular Arc</b></p>  <p>Fig. (b)</p>	$\frac{\pi r}{2}$	$\frac{2r}{\pi}$	$\frac{2r}{\pi}$
3	<p><b>Semi circular arc</b></p>  <p>Fig. (c)</p>	$\pi r$	0 (Symmetrical at y-axis)	$\frac{2r}{\pi}$
4	<p><b>Circle</b></p>  <p>Fig. (d)</p>	$2\pi r$	0 (Symmetrical at y-axis)	0 (Symmetrical at x-axis)

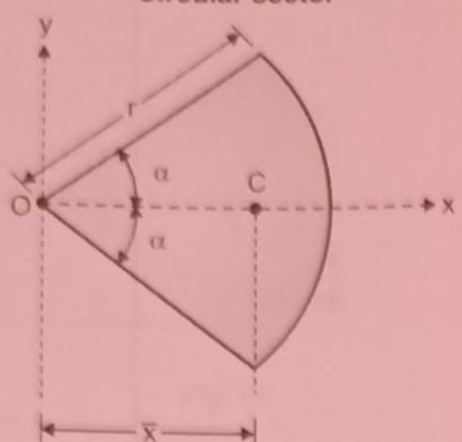
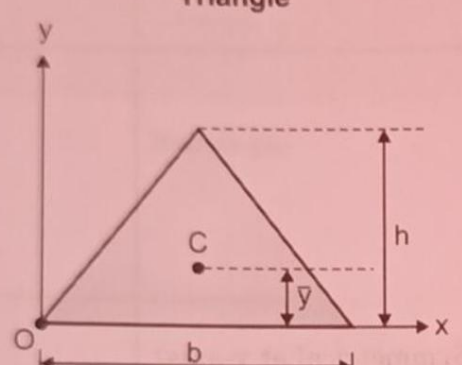
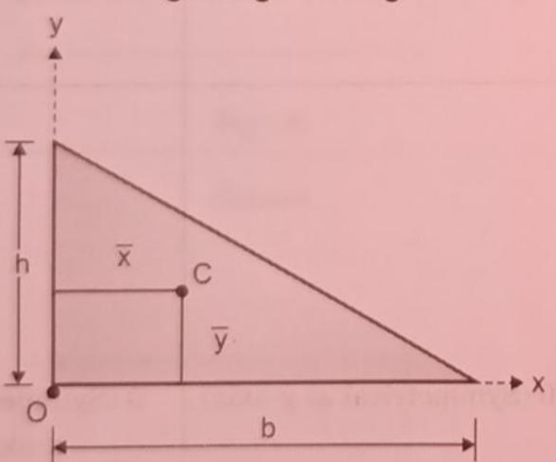
Sr. No.	Shape	Length ( $l$ )	$\bar{x}$	$\bar{y}$
5	<p>Arc of a circle</p>  <p>Fig. (e)</p>	$2r\alpha^c$ $(\alpha^c = \alpha \text{ in radians})$	$\frac{r \sin \alpha^\circ}{\alpha^c}$ $(\alpha^\circ = \alpha \text{ in degrees})$	0 (Symmetrical at x-axis)

### 5.7 Centroids of Common Geometrical Shapes of Areas :

Sr. No.	Shape	Area (A)	$\bar{x}$	$\bar{y}$
1	<p>Rectangle</p>  <p>Fig. (a)</p>	$lb$	$\frac{l}{2}$	$\frac{b}{2}$
2	<p>Square</p>  <p>Fig. (b)</p>	$a^2$	$\frac{a}{2}$	$\frac{a}{2}$

Sr. No.	Shape	Area (A)	$\bar{x}$	$\bar{y}$
3	<p>Quarter circle</p>  <p>Fig. (c)</p>	$\frac{\pi r^2}{4}$	$\frac{4r}{3\pi}$	$\frac{4r}{3\pi}$
4	<p>Semi-circle</p>  <p>Fig. (d)</p>	$\frac{\pi r^2}{2}$	0 (Symmetrical at y-axis)	$\frac{4r}{3\pi}$
5	<p>Circle</p>  <p>Fig. (e)</p>	$\pi r^2$	0 (Symmetrical at y-axis)	0 (Symmetrical at x-axis)



Sr. No.	Shape	Area (A)	$\bar{x}$	$\bar{y}$
6	<p>Circular sector</p>  <p>Fig. (f)</p>	$\alpha^c r^2$	$\frac{2r \sin \alpha^o}{3\alpha^c}$ <p> <math>(\alpha^o = \alpha \text{ in degrees})</math>  <math>\alpha^c = \alpha \text{ in radians}</math> </p>	0 (Symmetrical at x-axis)
7	<p>Triangle</p>  <p>Fig. (g)</p>	$\frac{1}{2}bh$		$\frac{1}{3}h$
8	<p>Right angled triangle</p>  <p>Fig. (h)</p>	$\frac{1}{2}bh$	$\frac{1}{3}b$	$\frac{1}{3}h$