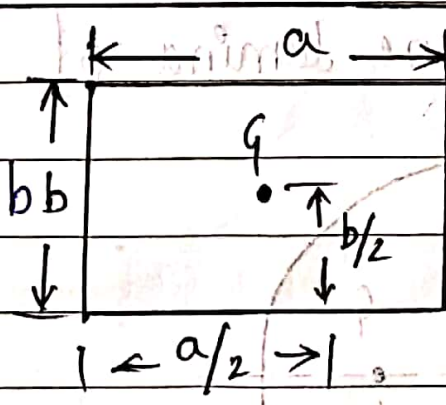
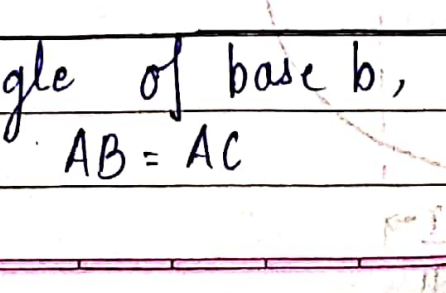


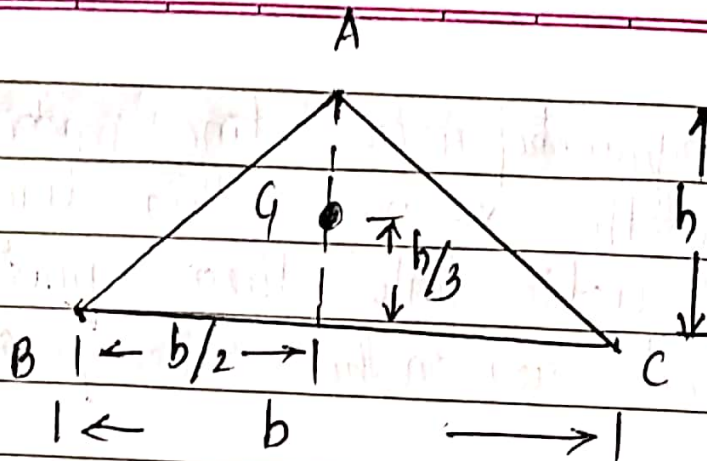
The line of symmetry is a line making an angle 45° with x-axis. This line divides the quarter circle into two equal areas. As the centroid lies on the line of symmetry.

$$\bar{x} = \bar{y} = \frac{4r}{3\pi}$$

$$\text{Centroid } G(\bar{x}, \bar{y}) = \left(\frac{4r}{3\pi}, \frac{4r}{3\pi} \right)$$

* Tabulation for centroid formulae for different geometrical figures.

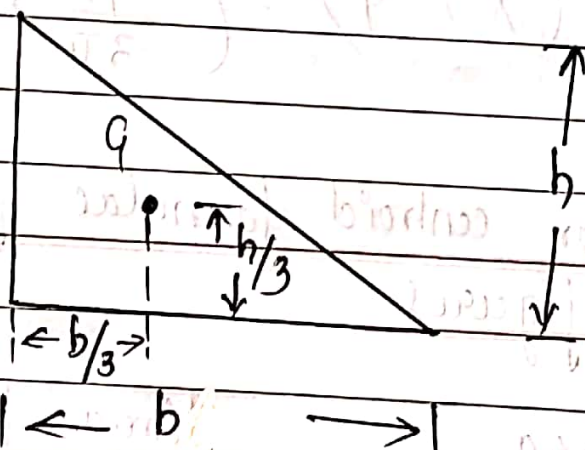
Sl. No.	Basic Area	Area	Location of centroid
(1)	Rectangle of dimensions $a \times b$ 	ab	$\left[\frac{a}{2}, \frac{b}{2} \right]$
(2)	Isosceles triangle of base b , height h , $AB = AC$ 	$\frac{1}{2}bh$	On the line of symmetry at height $h/3$ from base



- 3) Right angled triangle of base b , height h .

$$\frac{1}{2}bh$$

$$\frac{1}{3} \text{rd of}$$



the side
i.e from
the vertex
where there
is right angle

- 4) Semi-circular plane lamina of radius ' r '



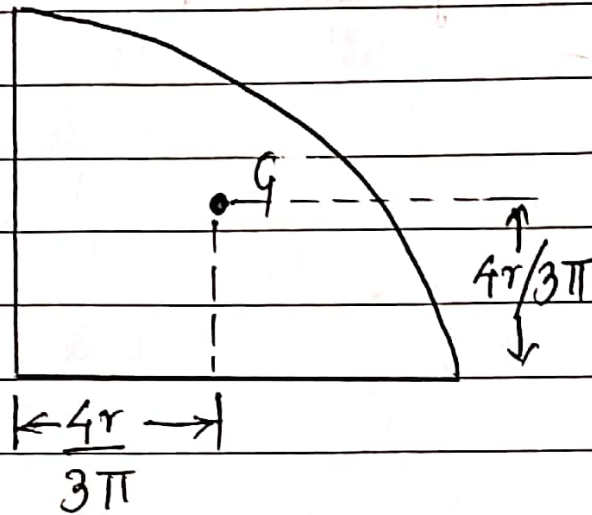
$$\frac{\pi r^2}{2}$$

On the line
of symmetry
at a distance
 $\frac{4r}{3}$ from
the centre

⑤ Quarter circle plane lamina of radius 'r'

$$\frac{\pi r^2}{4}$$

On the line of symmetry at an angle of 45° at a distance of $\frac{4r}{3\pi}$ along both axis.



⑥ Circle of radius, r

$$\pi r^2$$

Centre of circle.

