

Centre of Gravity

"Centre of gravity of a body is the point through which the whole weight of the body acts".

→ It's represented by CG or G .

Centroid

"The centroid or centre of area is defined as the pt. where the whole area of the figure is assumed to be concentrated."

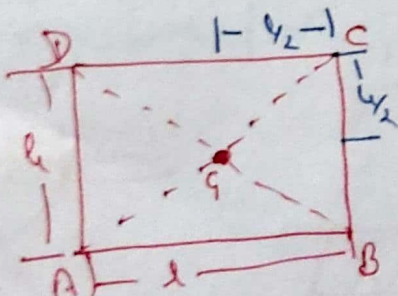
→ To find out Centre of Gravity or Centroid of a Lamina:

Formula of C.G. of some Regular Lamina and Solids on the basis of geometrical consideration.

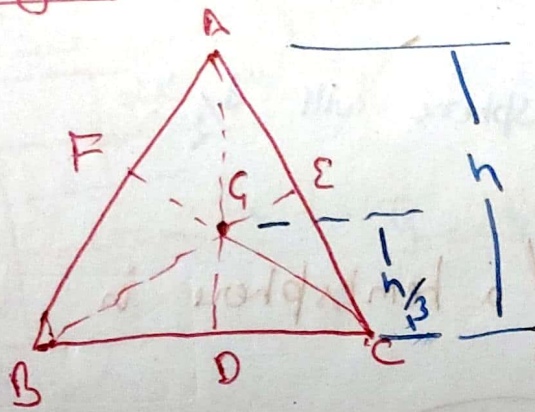
1) Uniform Rod :

Its mid point.

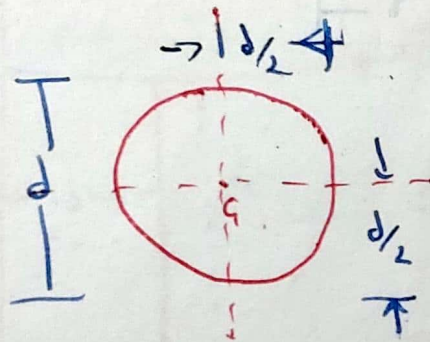
2) Rectangle, Square, rhombus, cuboid:



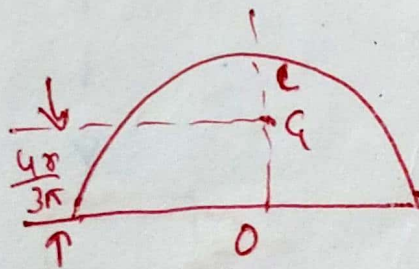
iii) Triangle



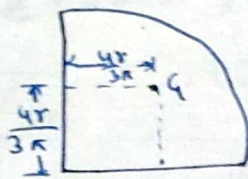
iv) Circular lamina



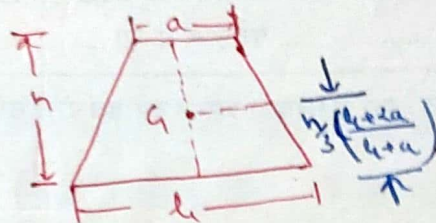
v) Semicircular lamina



vii. Quadrant!

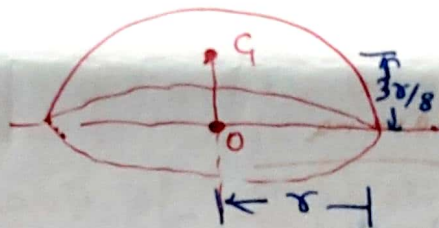


viii. Trapezium

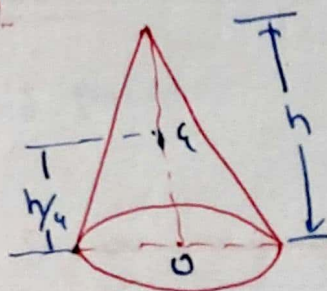


viii. Centre of gravity of a sphere will " $\frac{d}{2}$ ".

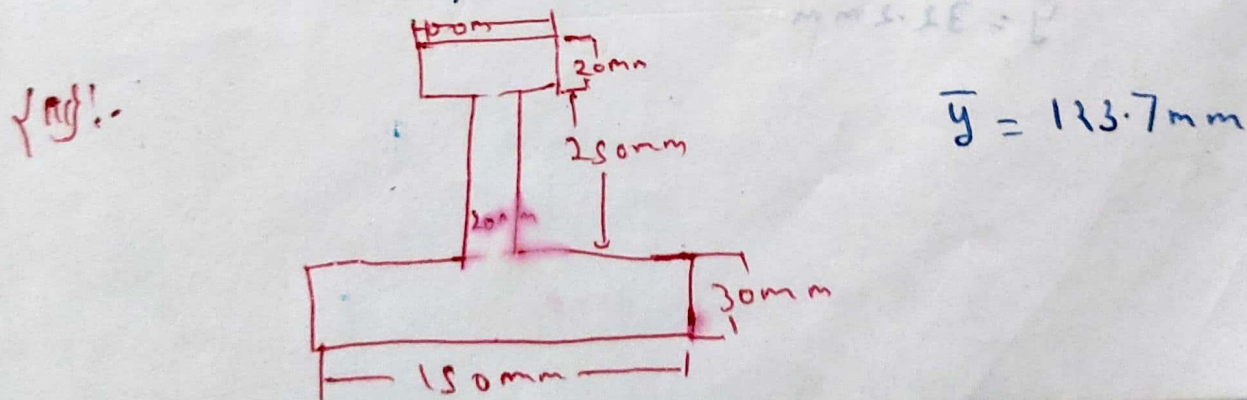
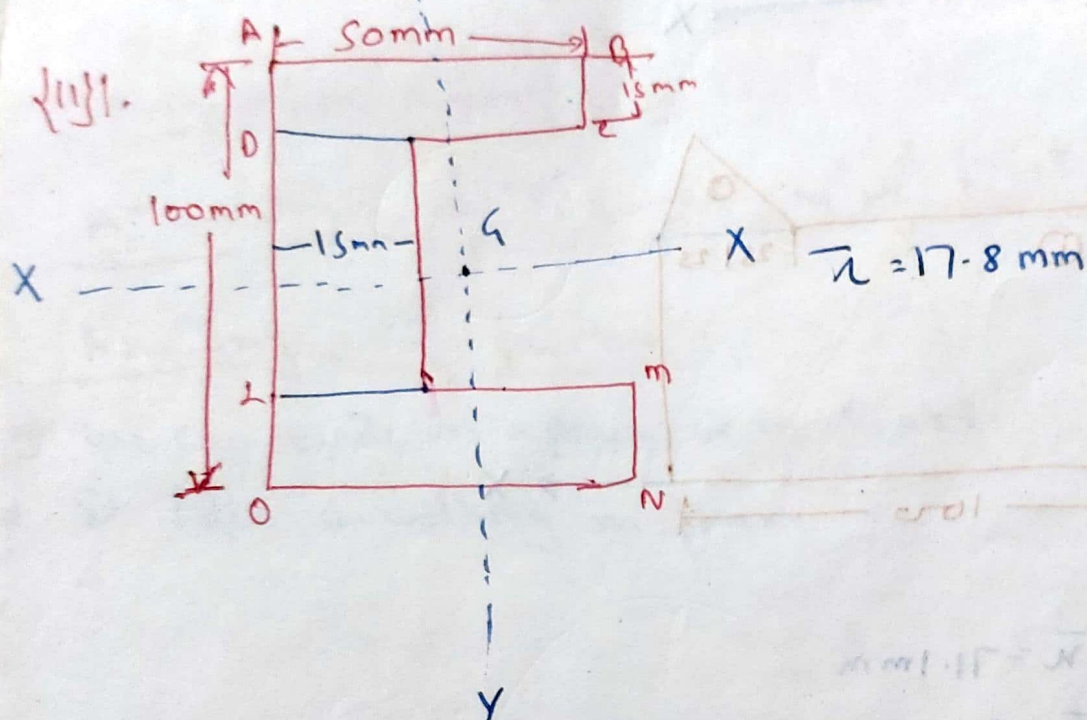
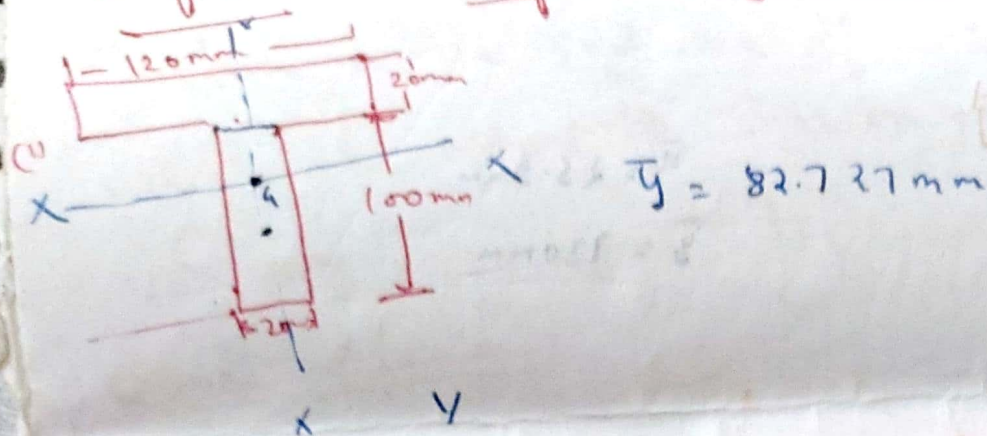
ix. The centre of gravity of a hemisphere is



x. Solid Cone

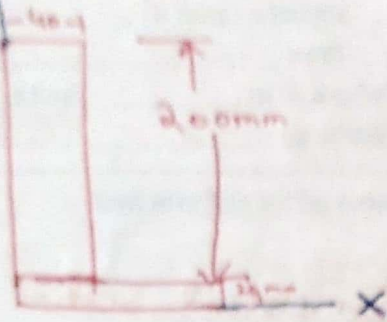


To find out C.G. of Symmetrical Section:



To find out Centroids or C.G. of Some
Unsymmetrical Section:

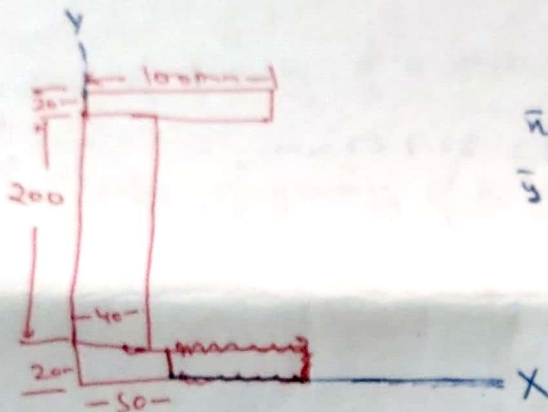
1) :-



$$\bar{x} = 26 \text{ mm}$$

$$\bar{y} = 90 \text{ mm}$$

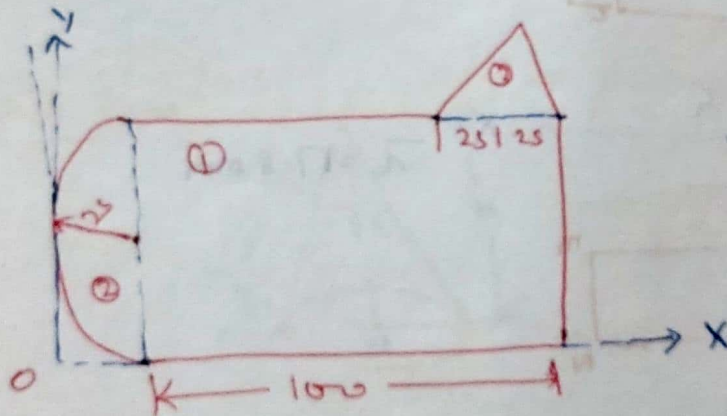
ii) :-



$$\bar{x} = 25.9 \text{ mm}$$

$$\bar{y} = 130 \text{ mm}$$

iii) :-



$$\bar{x} = 71.1 \text{ mm}$$

$$\bar{y} = 32.2 \text{ mm}$$