FAQ's

1. Define centre of gravity.

It is the point through which the entire weight of the body acts irrespective of the position of the body. Most commonly it is denoted as c.g. A body has only one c.g. Through the centre of gravity the entire weight of the object acts in the downward direction. Even when the orientation of the object is changed the centre of gravity does not shift.

2. Define centroid

Plane figures like rectangle, triangle, trapezium have only areas but no mass. Centre of area of such figure is known as centroid.

3. What is the difference between centre of gravity and centroid.

Centre of gravity	Centroid
It indicates the centre of mass of solid or three dimensional objects	It is the centre of area of two Dimensional plane figures like square, rectangle, etc.,

4. Find the distance of c.g for the channel section given below, from its base ('x' axis)
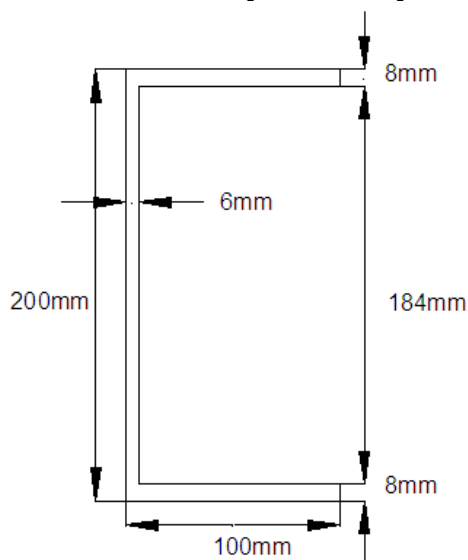
Step1: Divide the figure into 3 simple figures
Rectangle 1 of size 94mm*8mm
Rectangle 2 of size 200mm*6mm
Rectangle 3 of size 94mm*8mm

Step 2: Area of the simple figure
Area of the rectangle 1 = a_1=94*8=752mm^2
Area of the rectangle 2 = a_2=200*6=1200mm^2
Area of the rectangle 3 = a_3=94*8=752mm^2
Total area (Σa) = a_1+a_2+a_3= 752+1200+752=2704mm^2
Step 3: to find the centroidal distance y
Centroidal distance of the rectangle 1 from base, Y_1=200-(8/2)=196mm
Centroidal distance of the rectangle 2 from base, Y_2=200/2=100mm
Centroidal distance of the rectangle 3 from base, Y_3=8/2=4mm
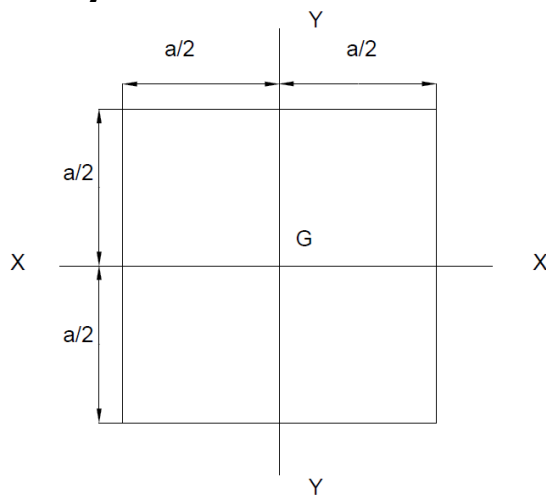Centroidal distance of the whole fig from its base ('x' axis),
(Y) = (a_1y_1+a_2y_2+a_3y_3)/Σa
     =(752*196 + 1200*100 + 752*4)/2704
(Y) =100mm

Result:
Distance of Centre of gravity from x axis = 100mm

5. Draw any one plane geometrical figure and locate the centre of gravity.

6. Write the formula for calculating moment of inertia of irregular plane area.
$I=\Sigma ar^2$
Where,
        I – moment of inertia
        a – area of small stips
        r – Square of perpendicular distance from the c.g. of divided strips from the reference line