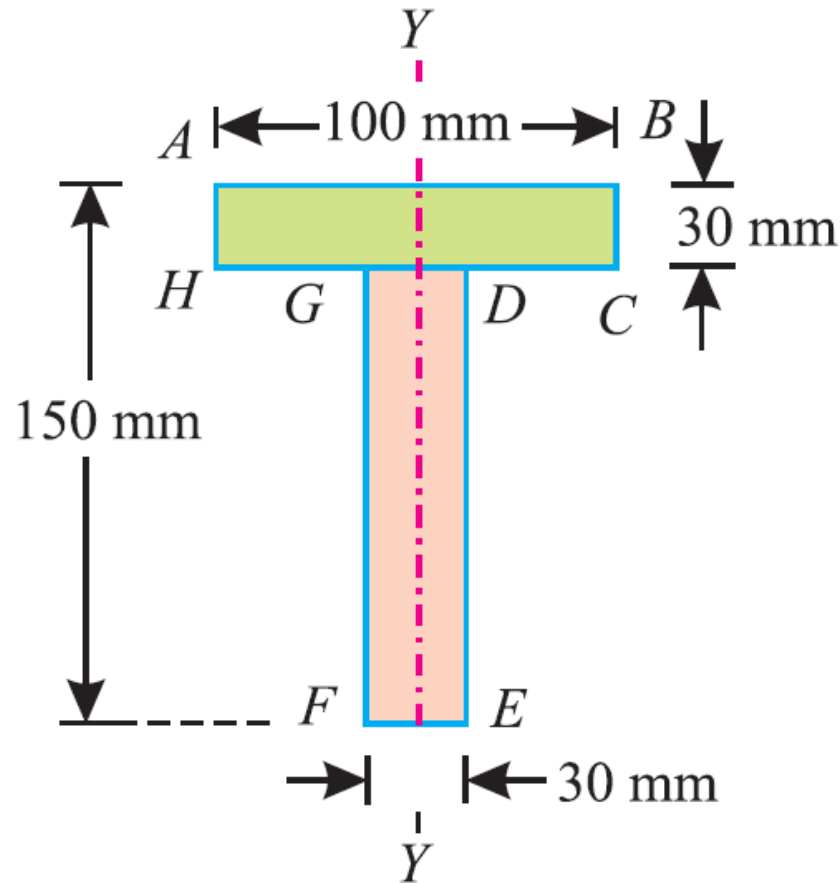
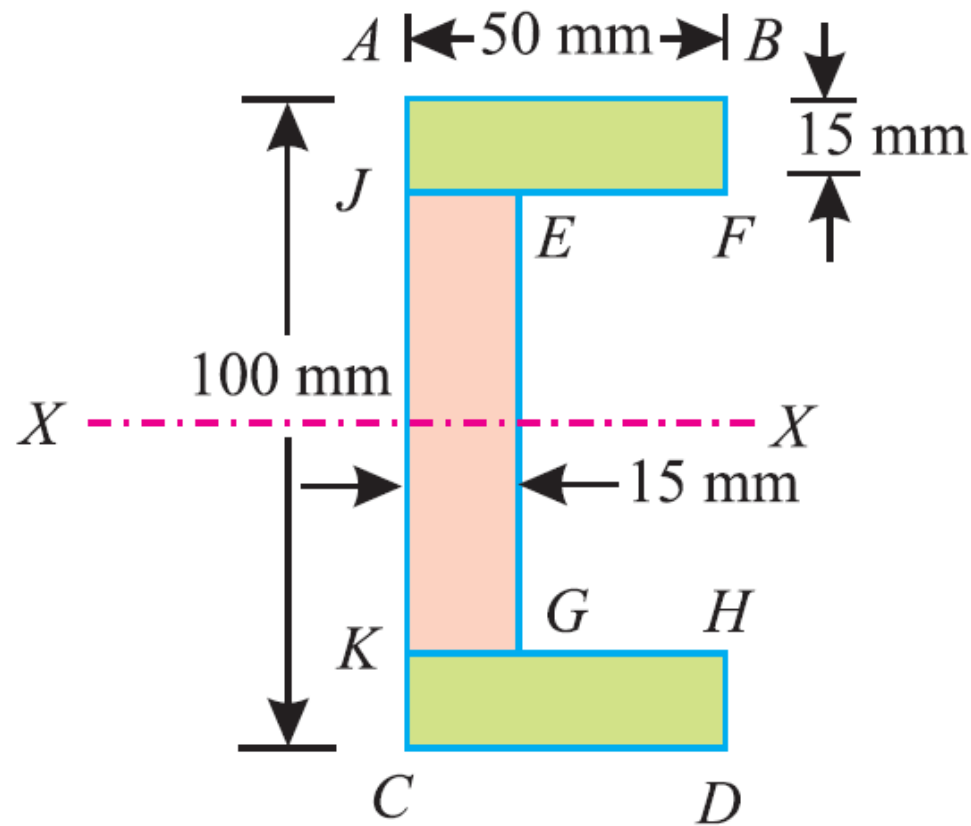


Unit 3: Centroid and Moment of Inertia

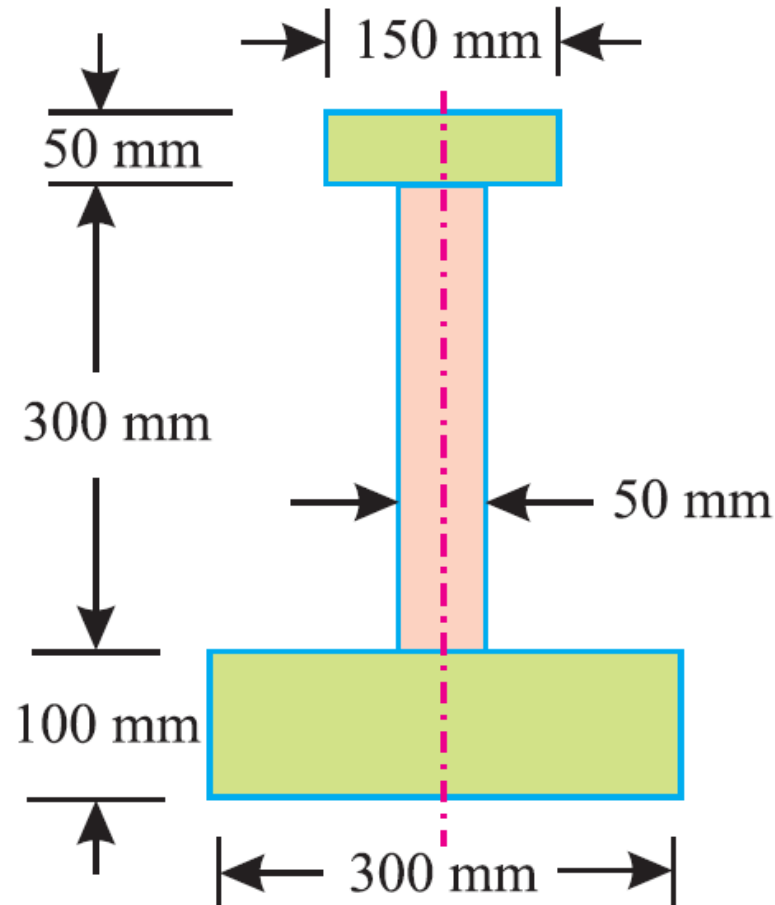
Find the center of gravity for the following figure



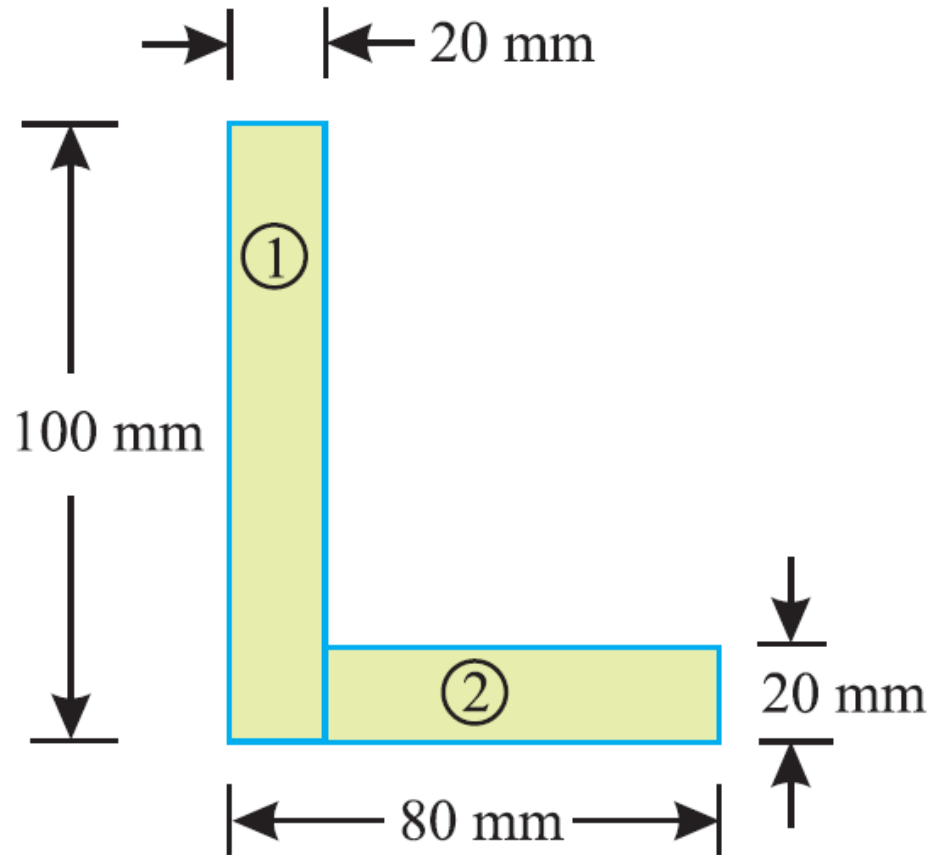
Find the center of gravity for the following figure



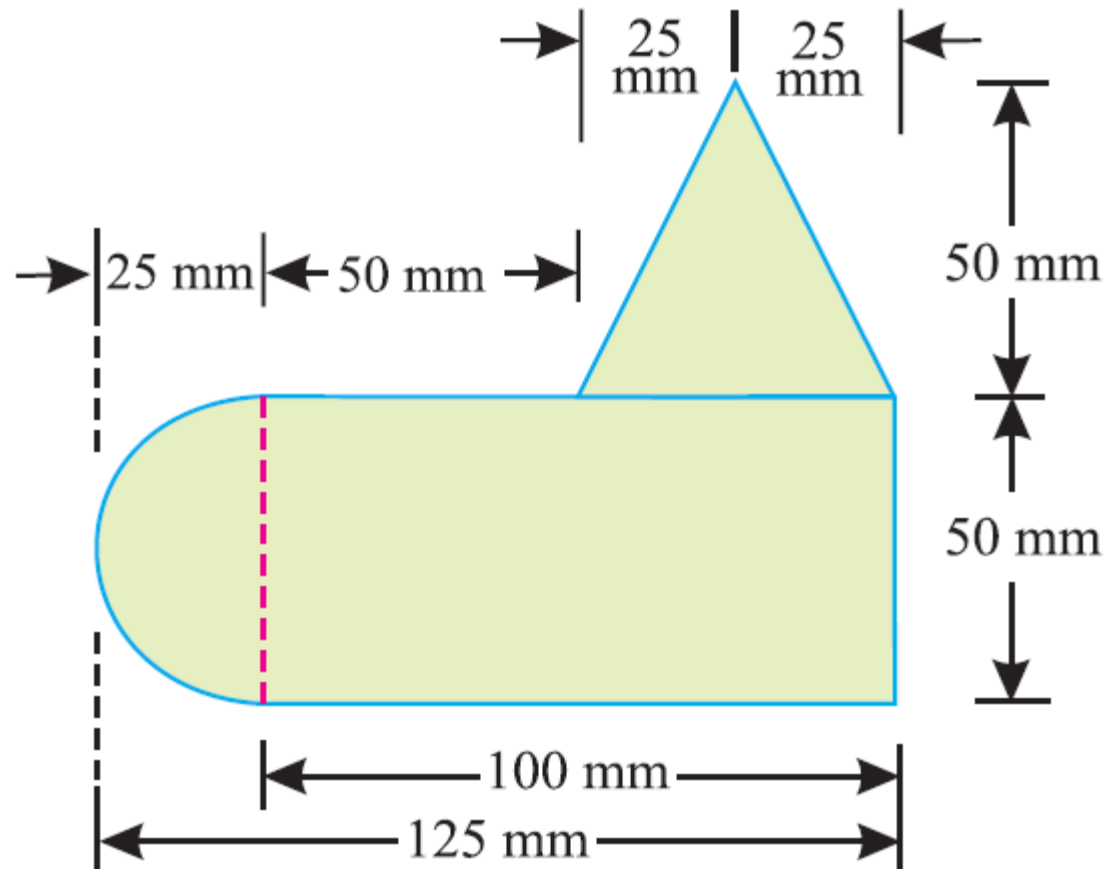
Find the center of gravity for the following figure



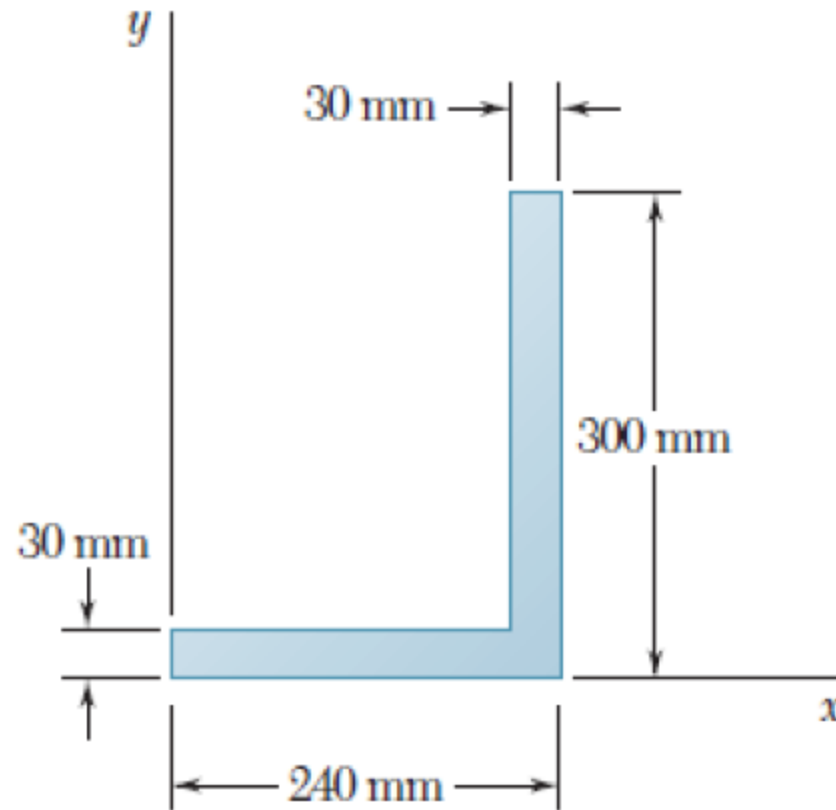
Find the center of gravity for the following figure



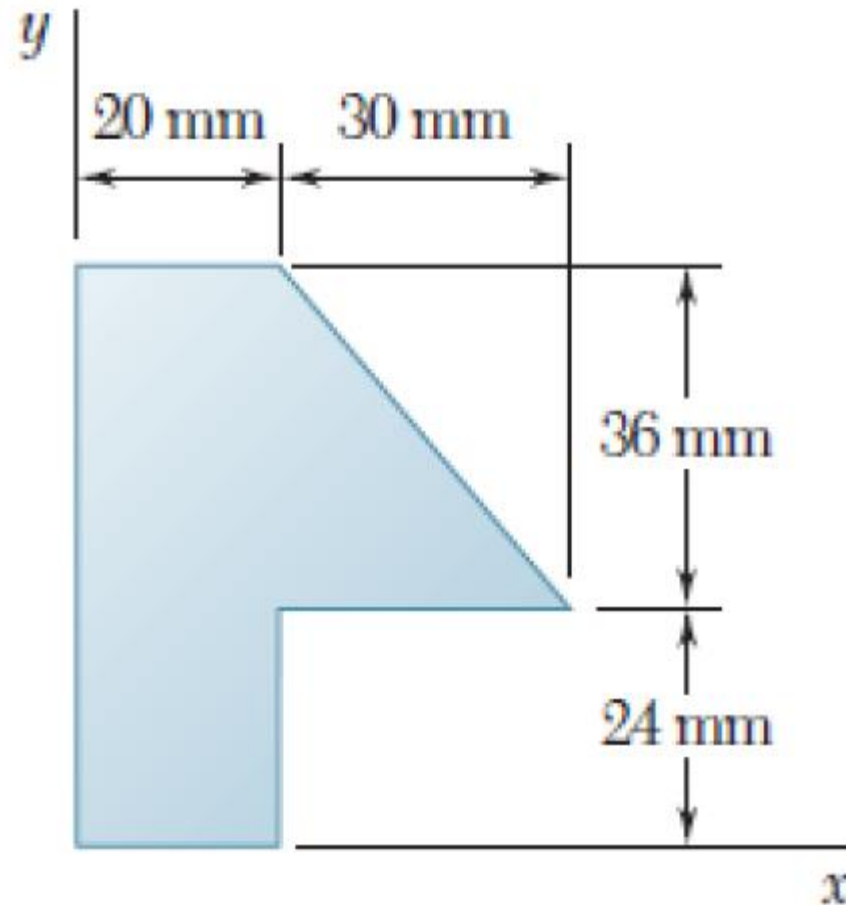
Find the center of gravity for the following figure



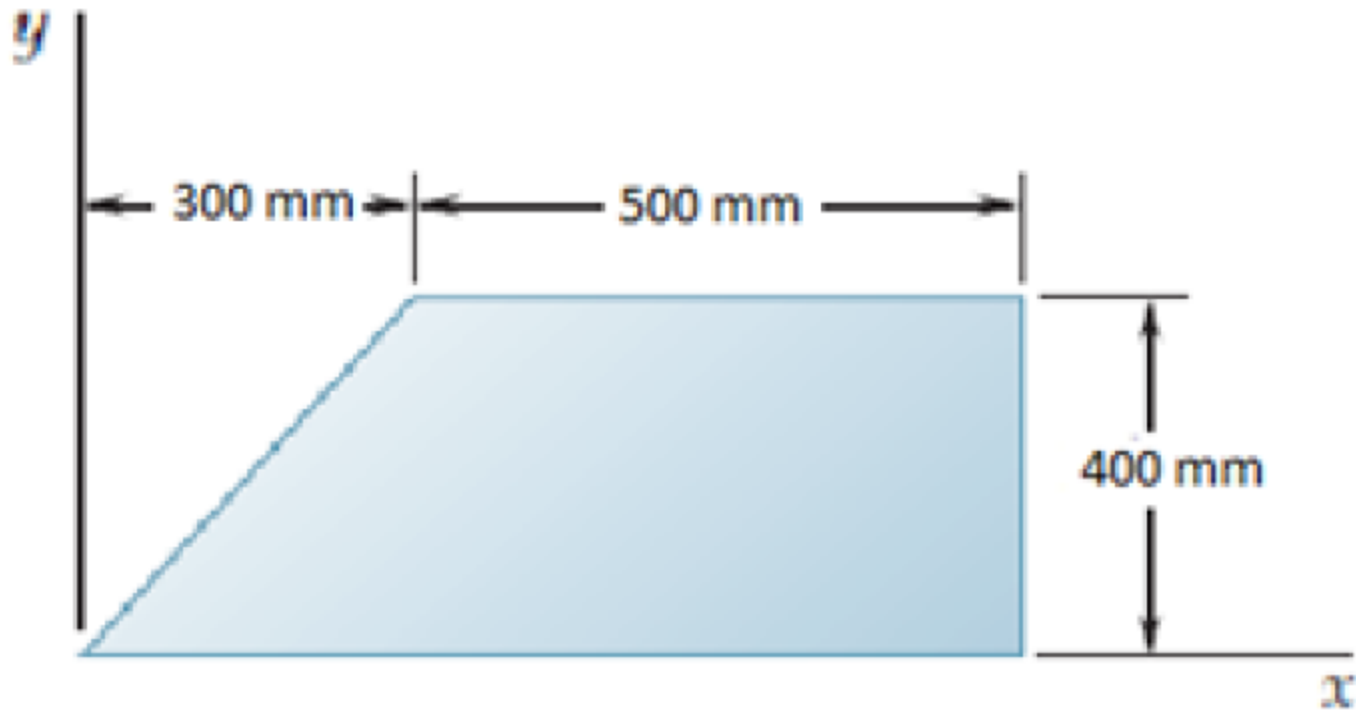
Find the center of gravity for the following figure



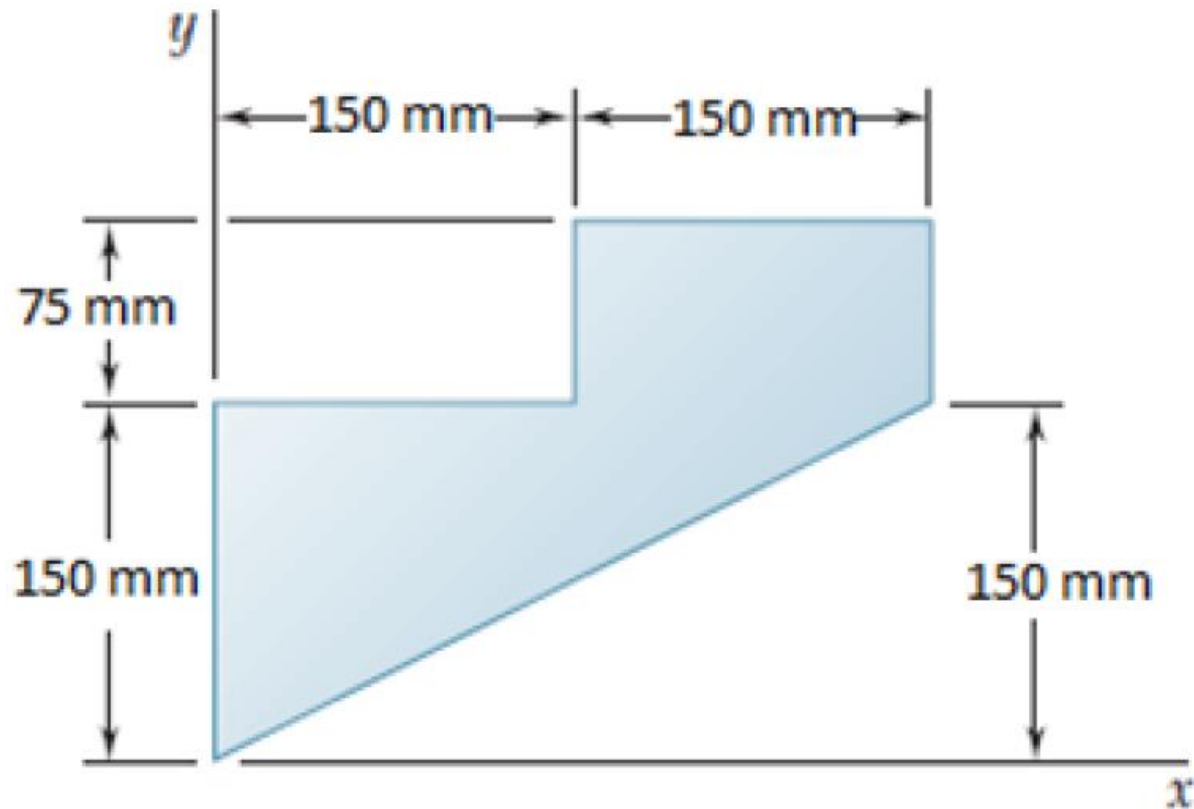
Find the center of gravity for the following figure



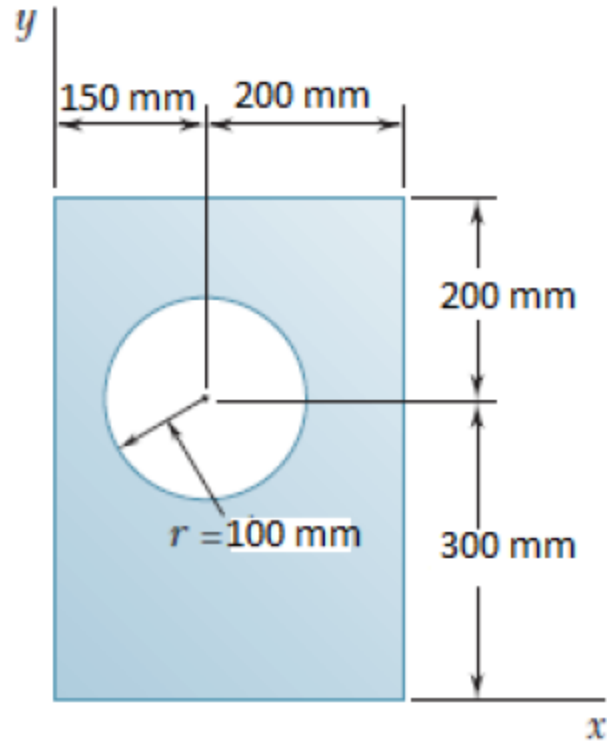
Find the center of gravity for the following figure



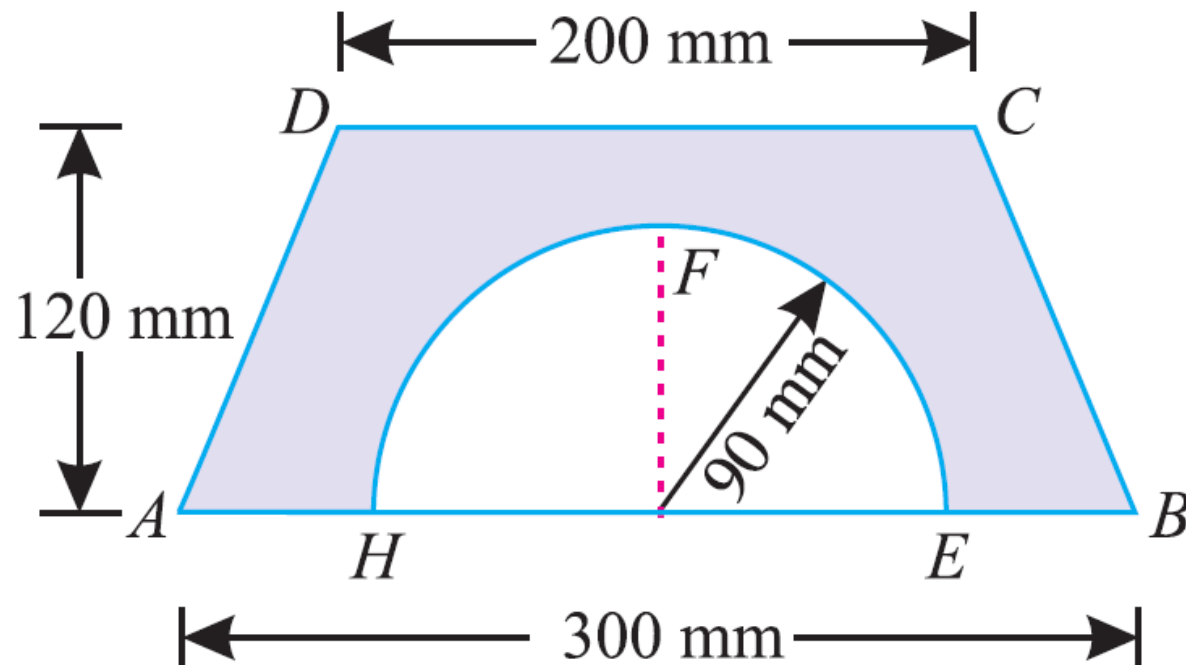
Find the center of gravity for the following figure



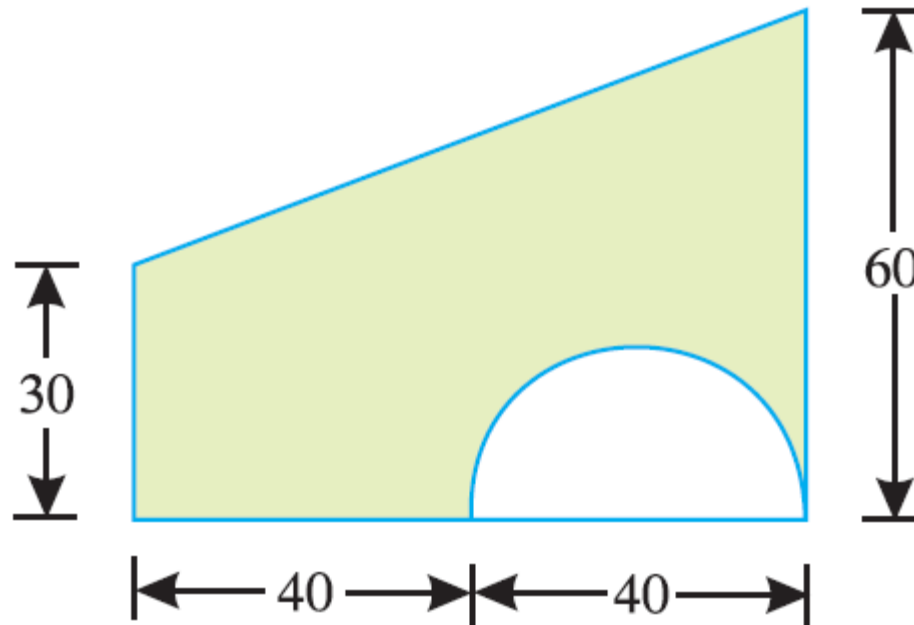
Find the center of gravity for the following figure



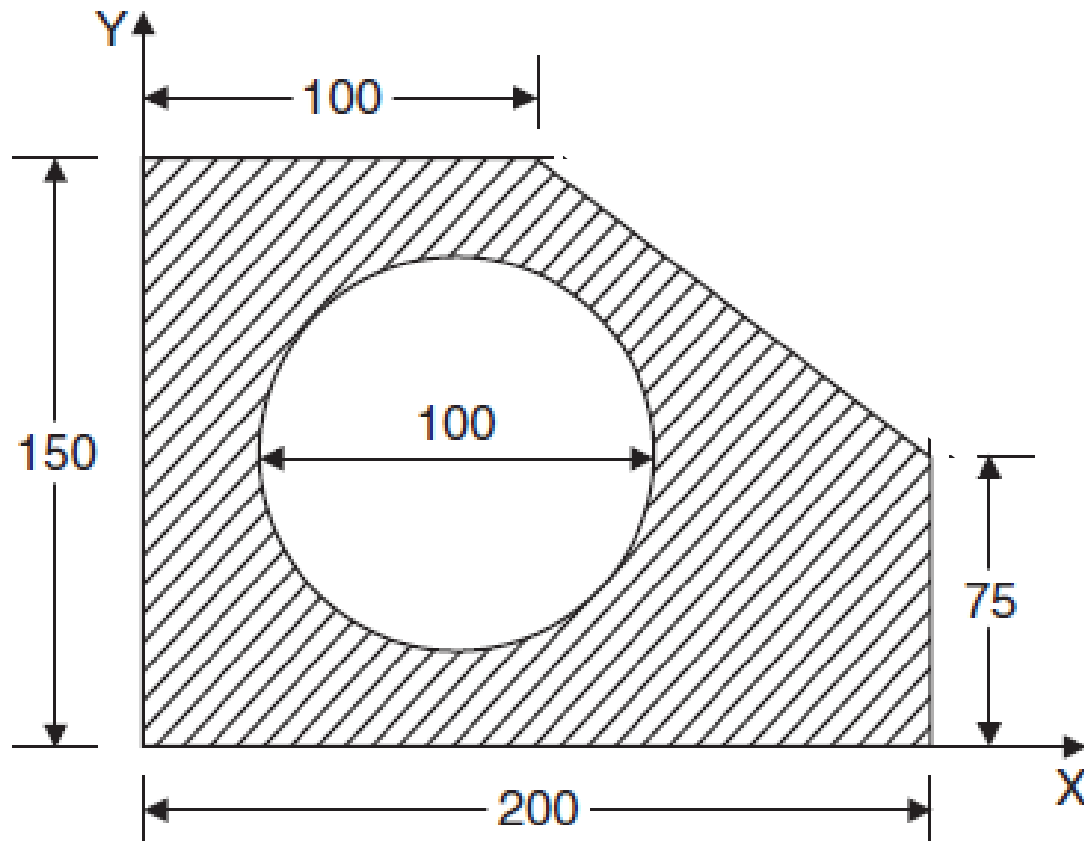
Find the center of gravity for the following figure



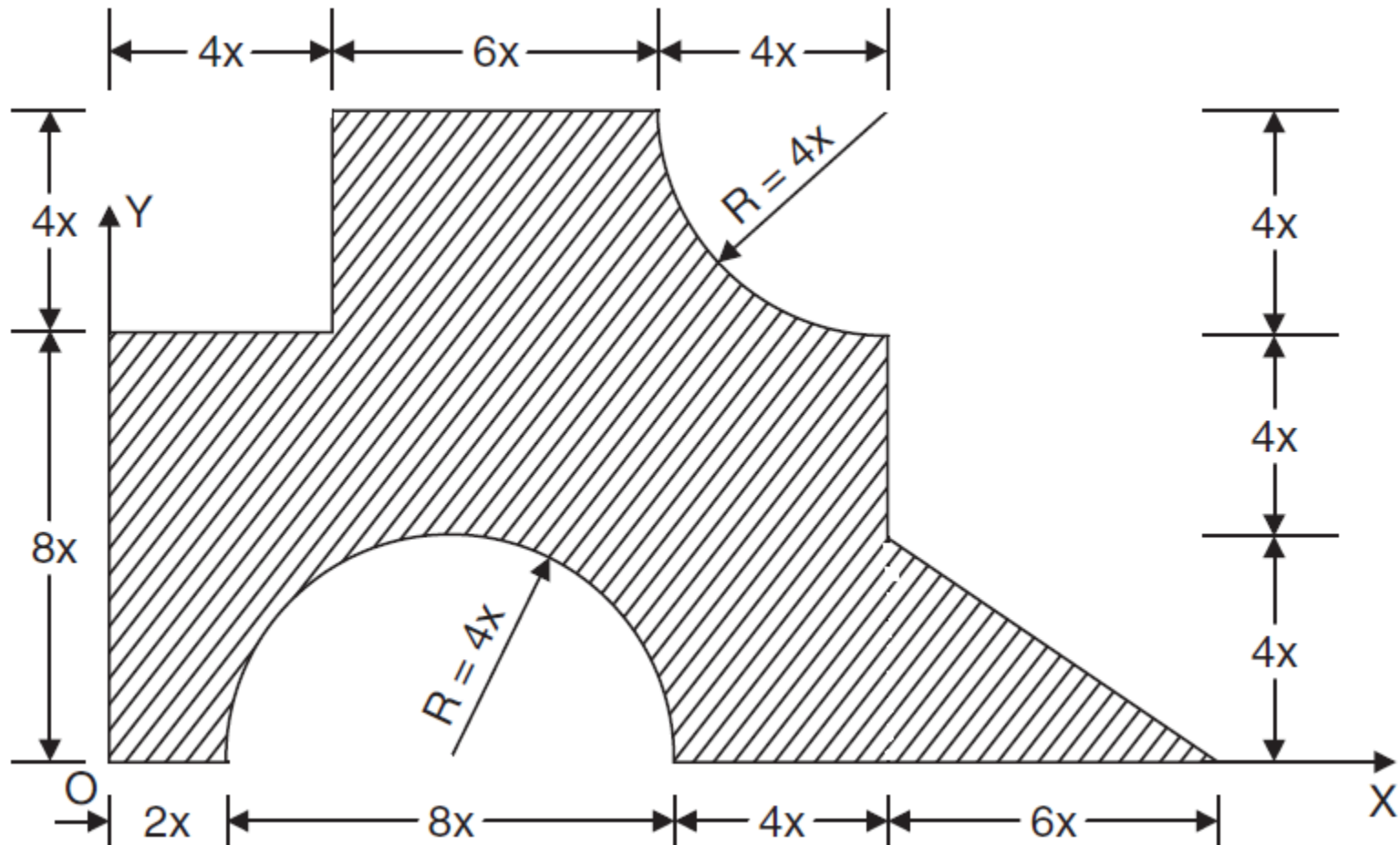
Find the center of gravity for the following figure



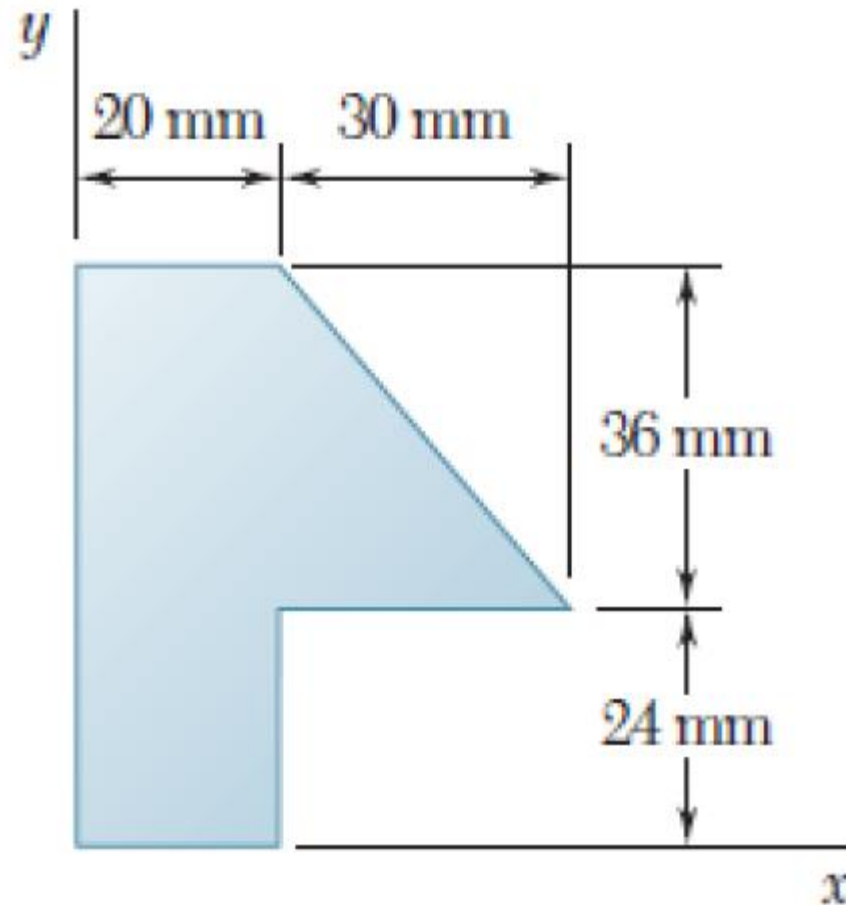
Find the center of gravity for the following figure



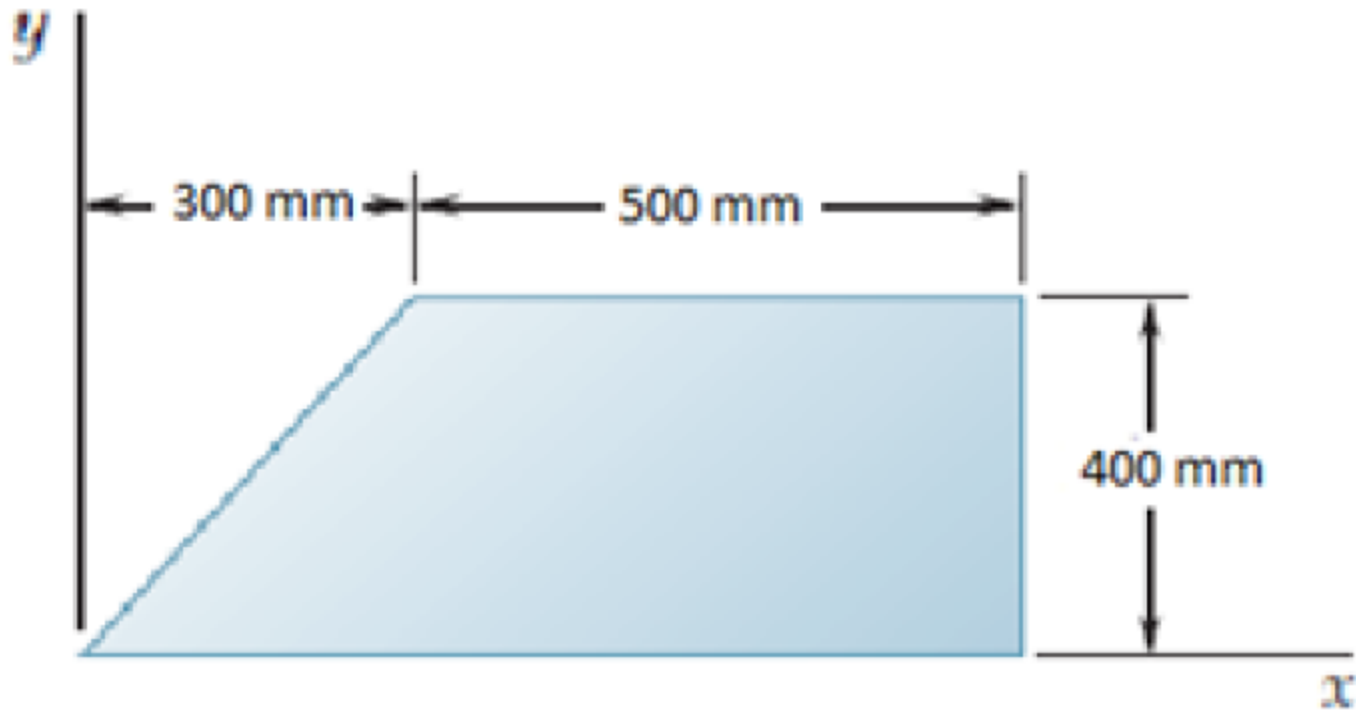
Find the center of gravity for the following figure



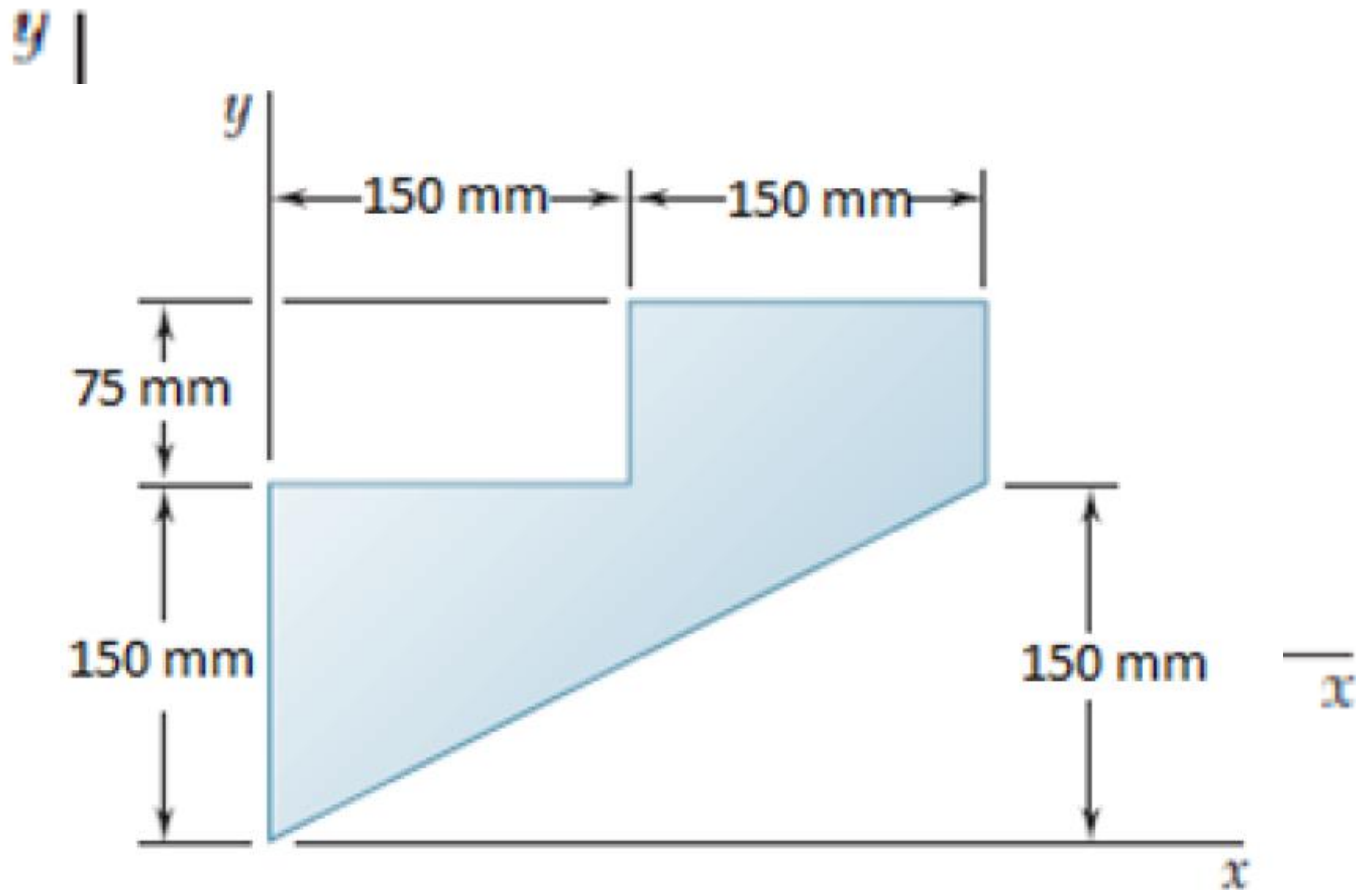
Find the center of gravity for the following wire frame



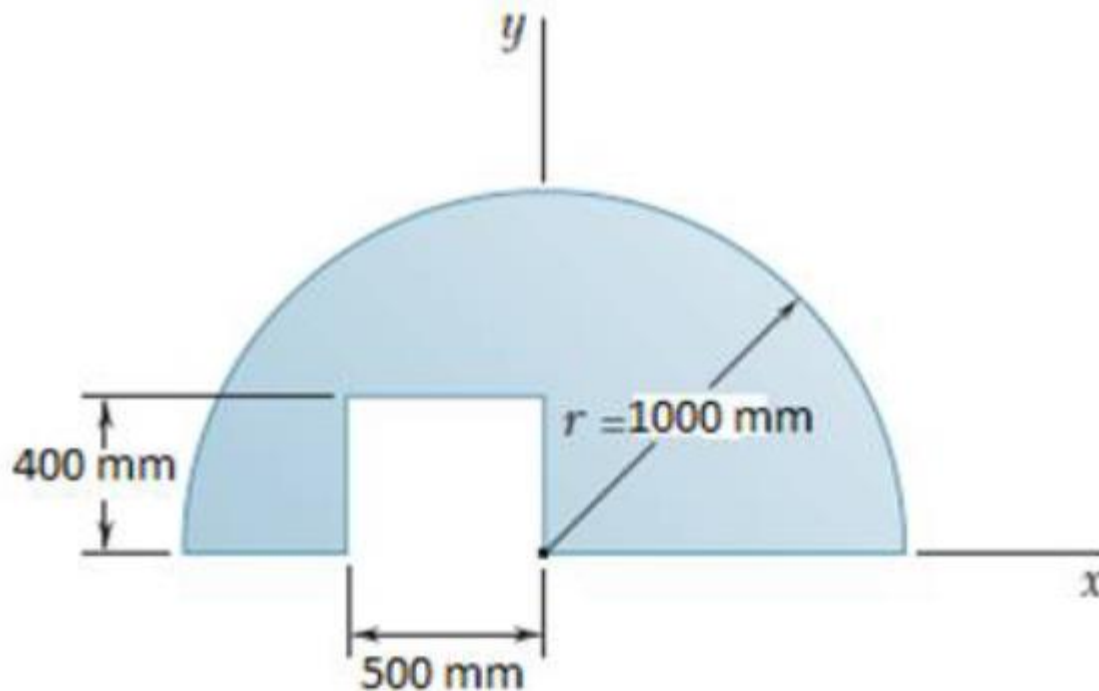
Find the center of gravity for the following wire frame



Find the center of gravity for the following wire frame

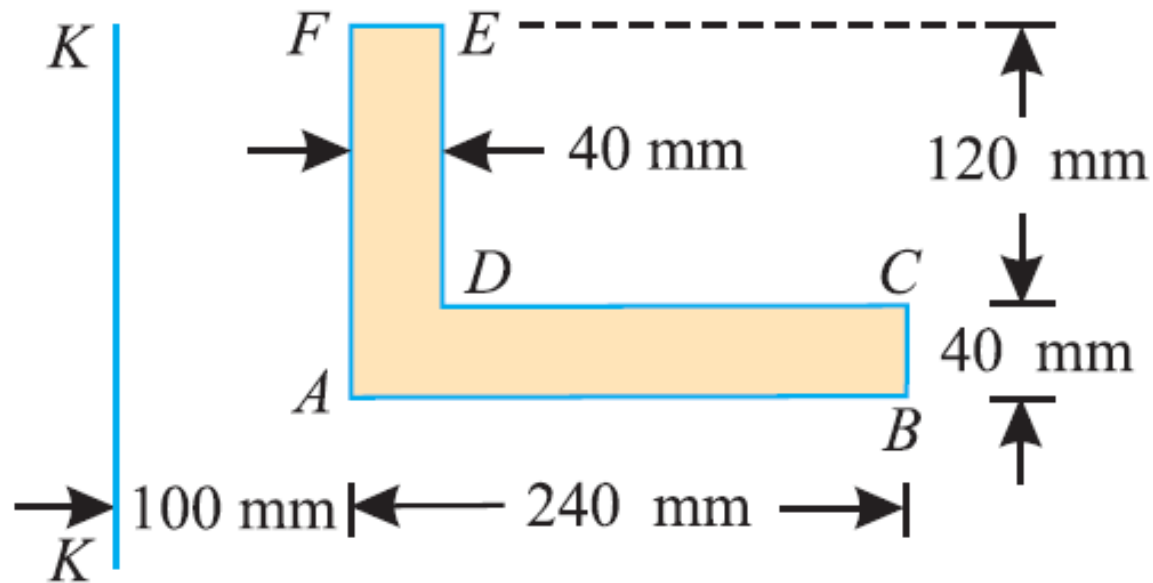


Find the center of gravity for the following wire frame

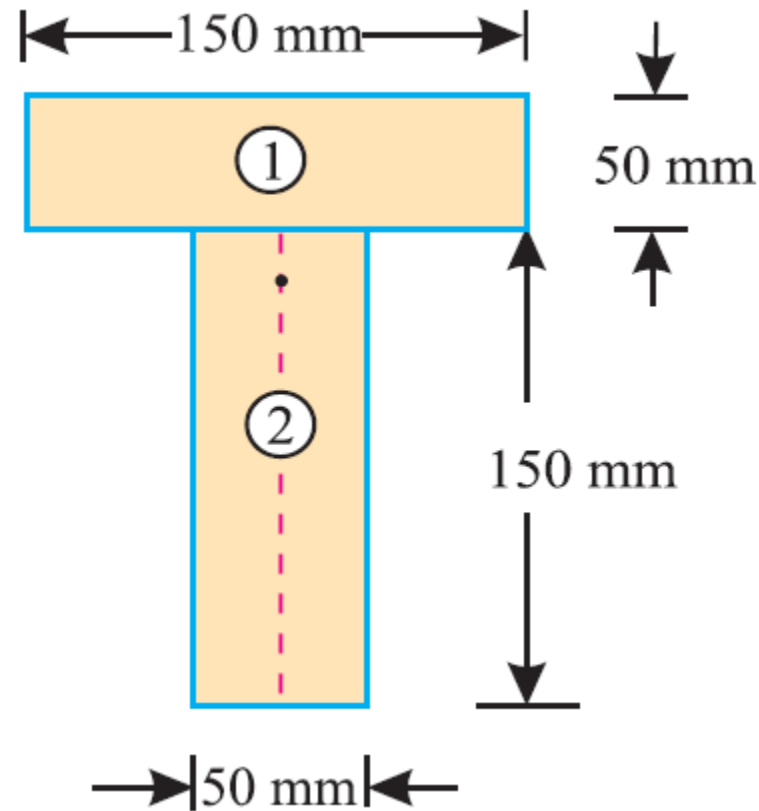


Moment of Inertia

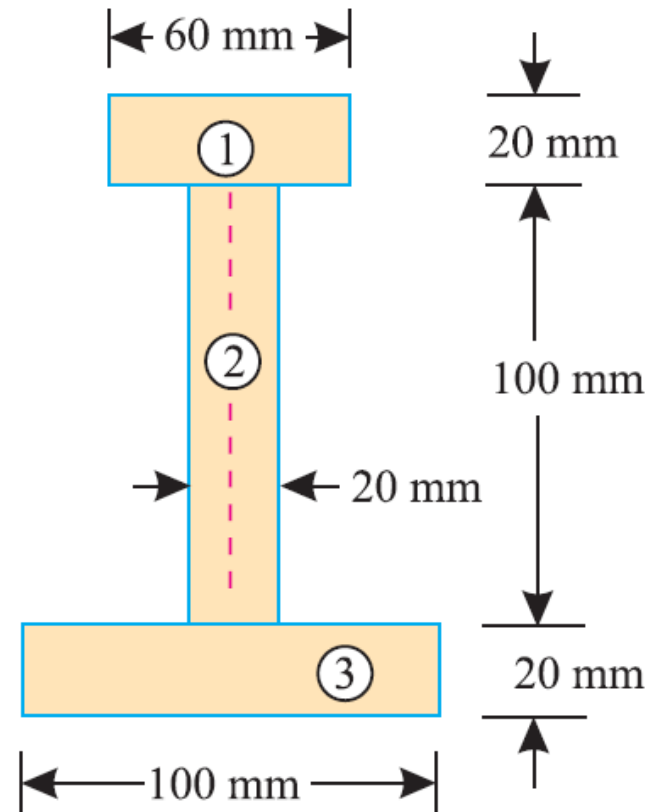
Compute the moment of inertia of the above area about axis K-K.



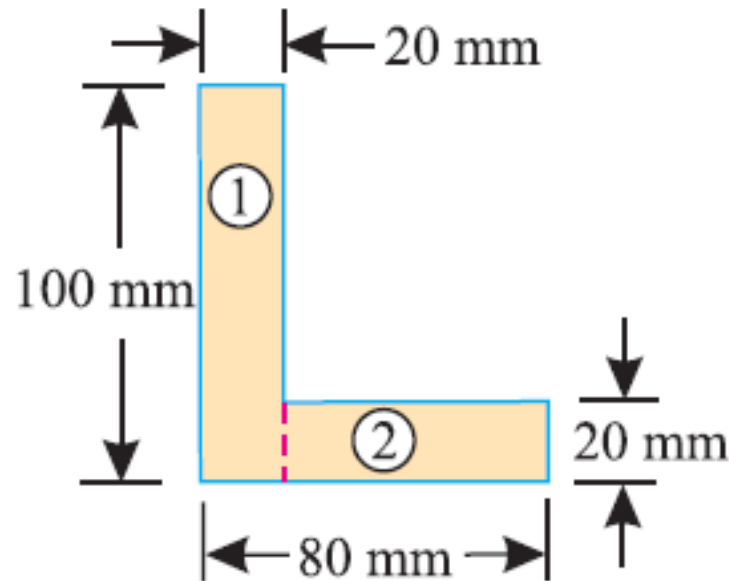
Find the moment of inertia of a T-section with flange as $150\text{ mm} \times 50\text{ mm}$ and web as $150\text{ mm} \times 50\text{ mm}$ about $X-X$ and $Y-Y$ axes through the centre of gravity of the section.



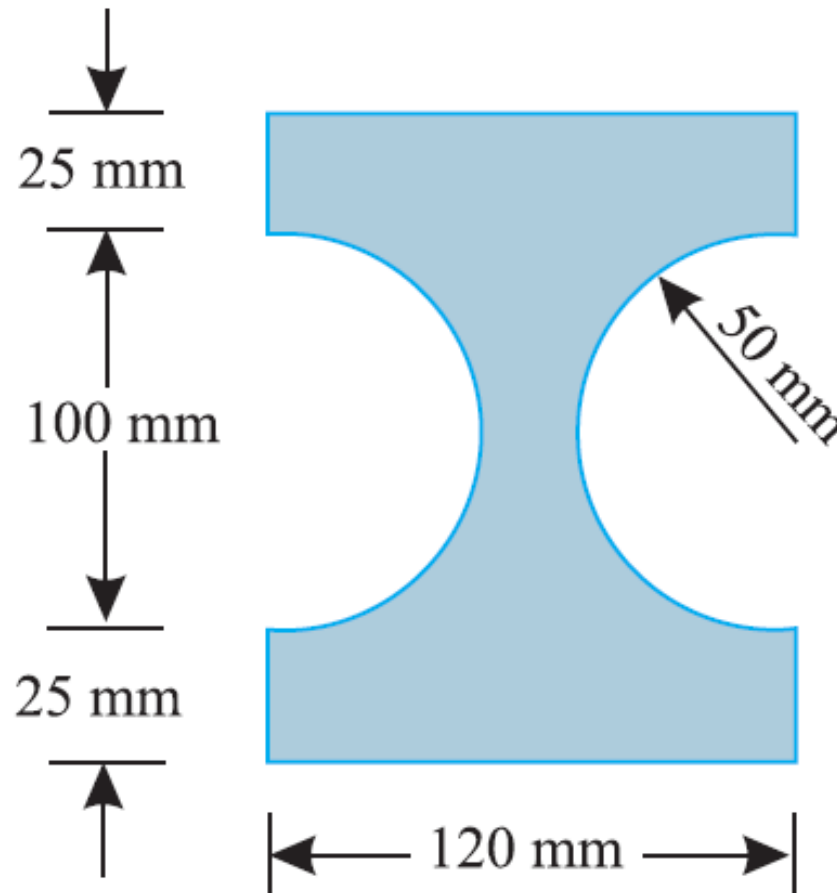
An I-section is made up of three rectangles as shown in Fig. 7.15. Find the moment of inertia of the section about the horizontal axis passing through the centre of gravity of the section.



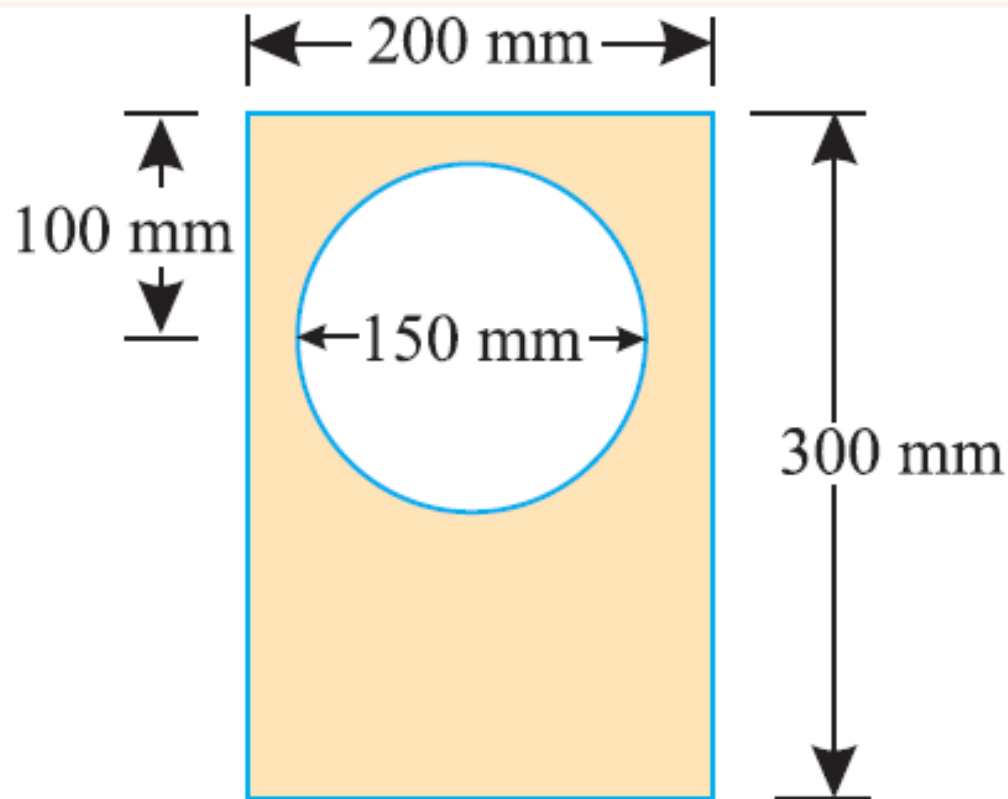
Find the moment of inertia about the centroid X-X and Y-Y axes of the angle section shown in Fig.



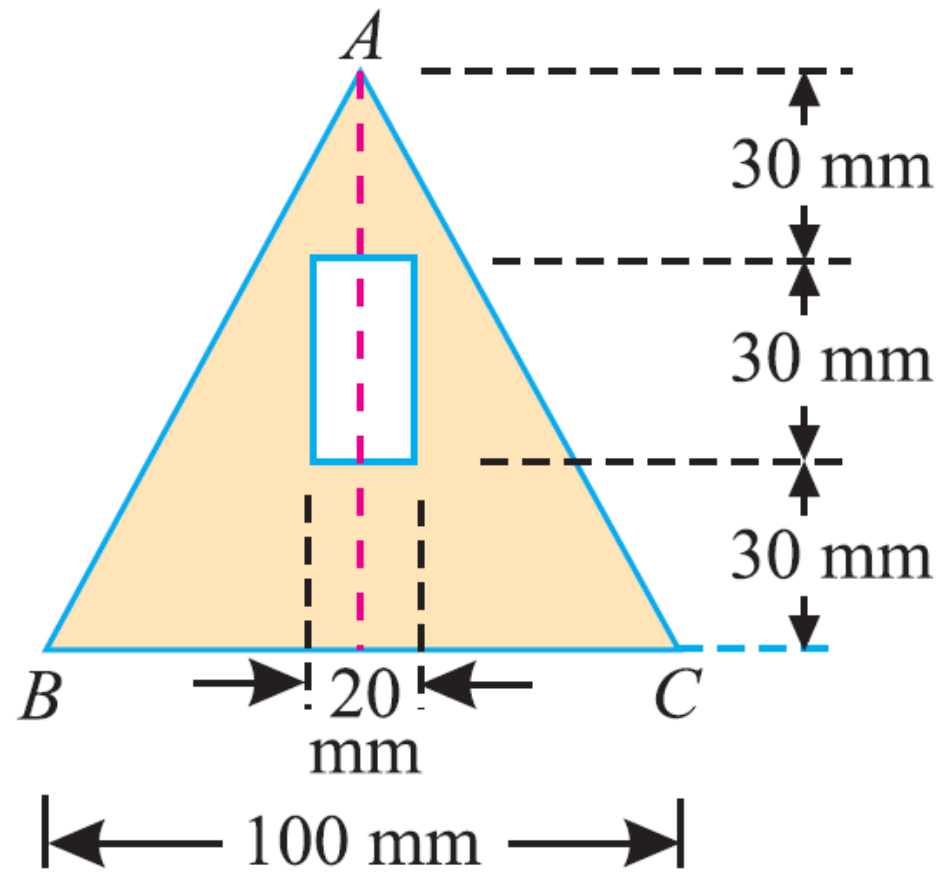
Determine the moments of inertia of the section about horizontal and vertical axes passing through the centroid of the section.



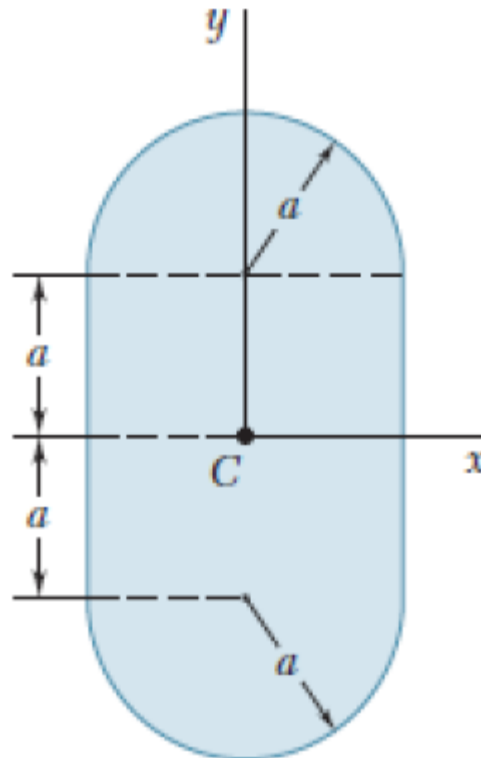
Find the moment of inertia of a hollow section shown in Fig. about an axis passing through its centre of gravity or parallel X-X axis.



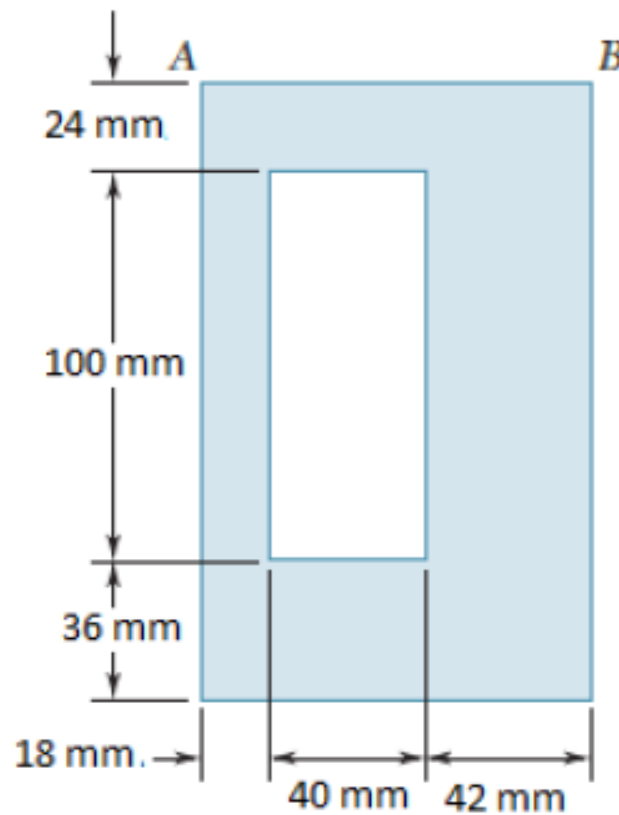
Determine the moment of inertia of the section about X-X axis passing through its centre of gravity and the base BC.



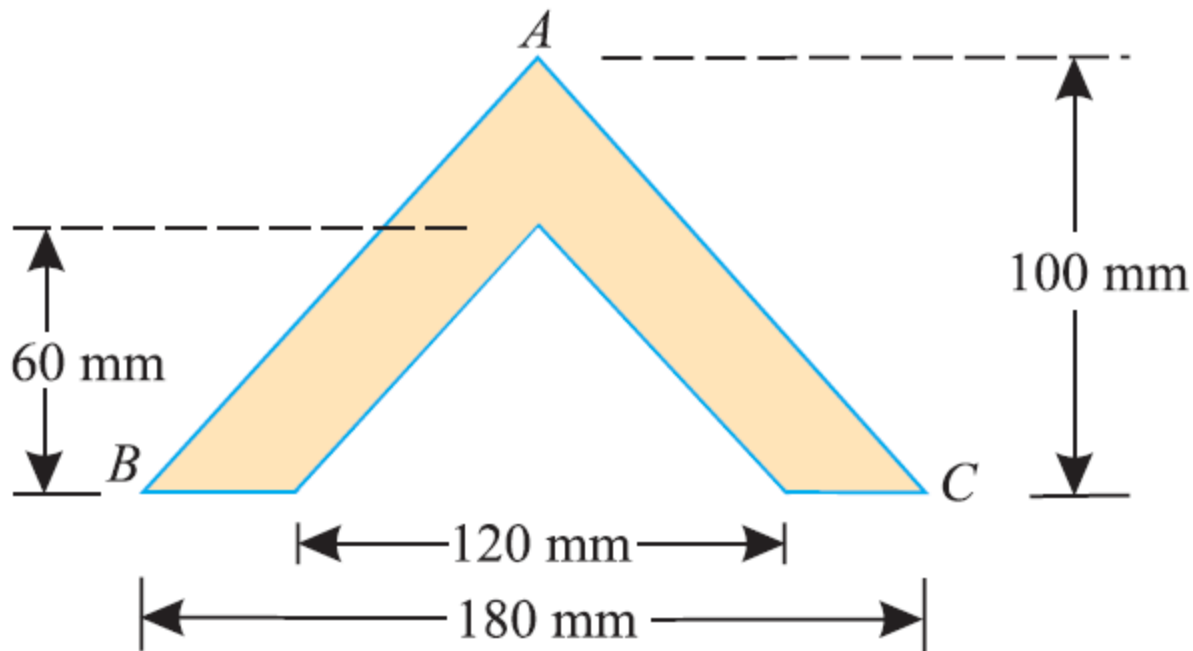
Determine the moments of inertia of the shaded area shown with respect to the x and y axes when $a=20$ mm as shown in figure



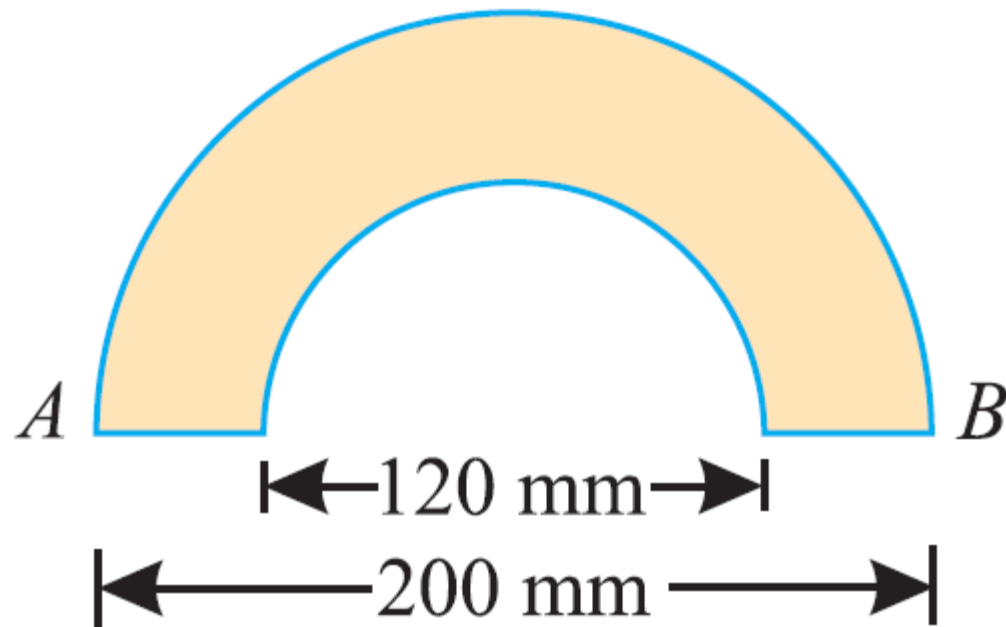
Determine the moments of inertia I_x and I_y of the area shown in figure with respect to centroidal axes respectively parallel and perpendicular to side AB .



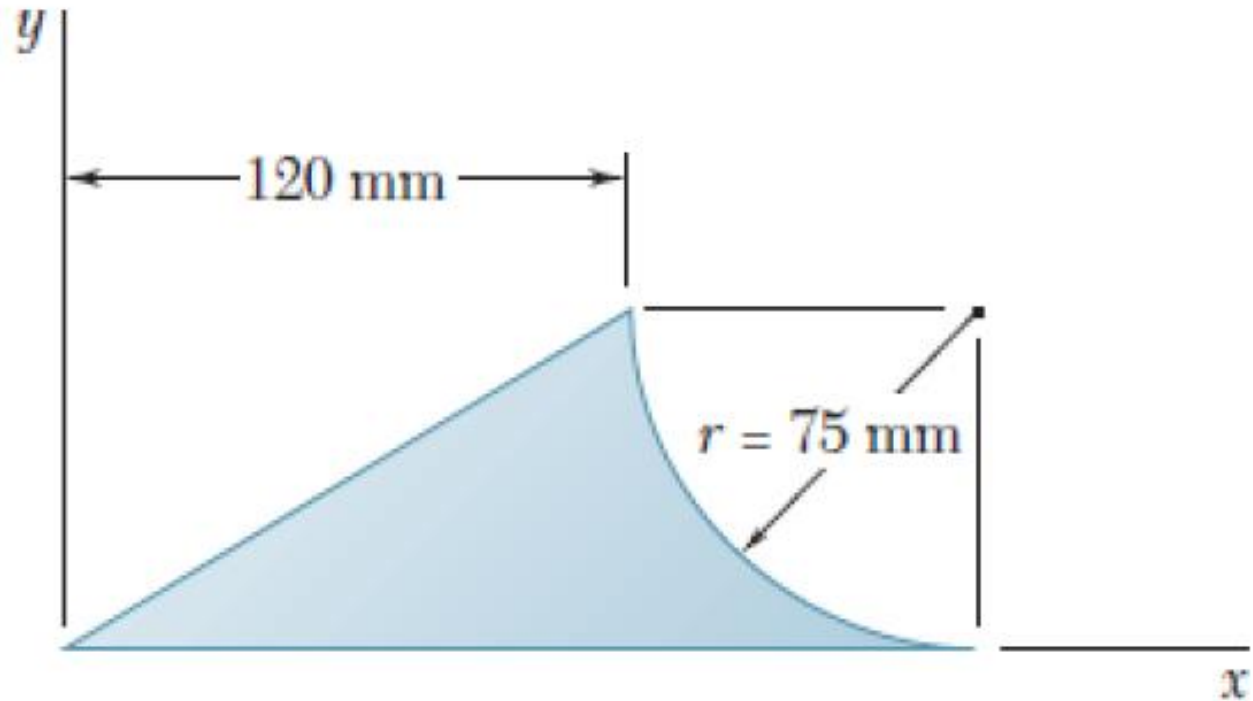
A hollow triangular section shown in Fig. is symmetrical about its vertical axis. Find the moment of inertia of the section about the base BC.



A hollow semicircular section has its outer and inner diameter of 200 mm and 120 mm respectively as shown in Fig. What is its moment of inertia about the base AB ?



Find the center of gravity for the following figure



Determine the polar moment of inertia of the area shown in figure with respect to (a) Point O, (b) the centroid of the area

