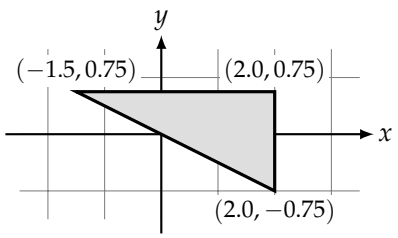
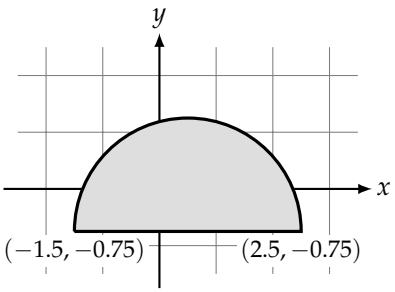
Engineering Statics - 04 Centroids

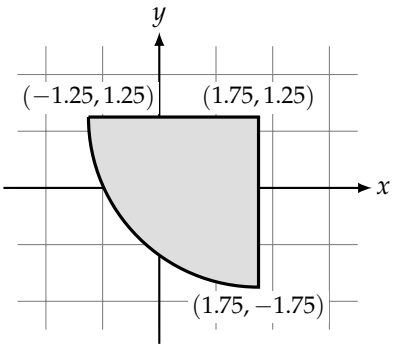
Exercise 1: Determine the coordinates of the centroid of the triangle shown.



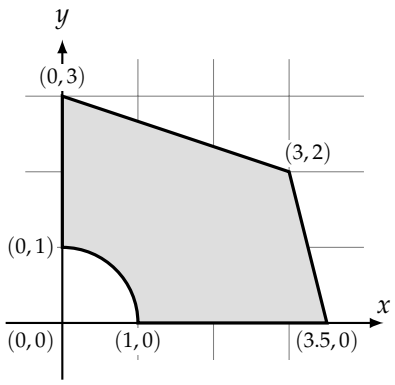
Exercise 2: Determine the coordinates of the centroid of the semi-circle shown.



Exercise 3: Determine the location of the centroid of the quarter-circle shown.

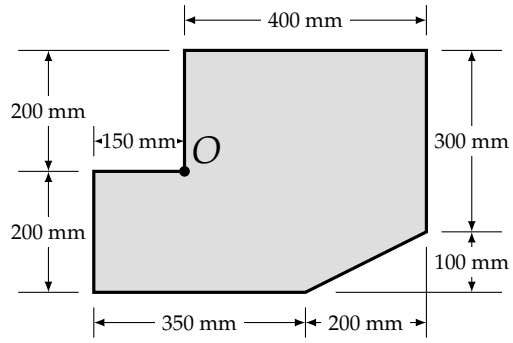


Example 1: Find the location of the centroid, C, relative to the coordinate origin.



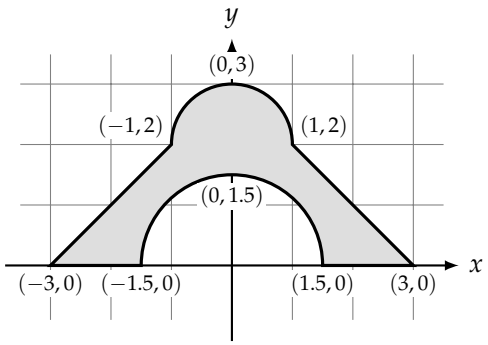
Exercise 4

Find the location of the centroid, C, relative to the point O.



Exercise 5

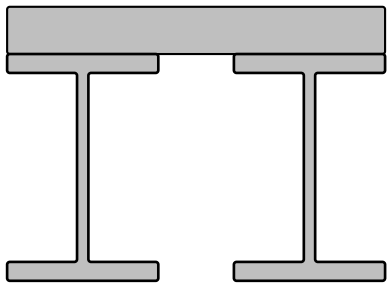
Find the location of the centroid, C, relative to the coordinate origin.



Example 2

Two W250X115 steel beams have a steel plate welded on top of them, as shown. The dimensions of the plate are 650 mm x 60 mm.

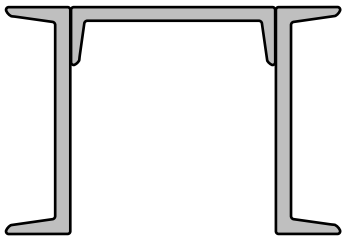
How far below the top of the built-up section is the centroidal x-axis?



Example 3

Two C200X20.5 and one C150X15.6 are welded together as shown.

How far below the top of the built-up section is the centroidal x-axis?



Exercise 6

Three C180 X 22.0 and a steel plate
(12 mm X 236.4 mm) are welded together.

Determine the location of the centroid, relative to the bottom left hand corner of the composite area.