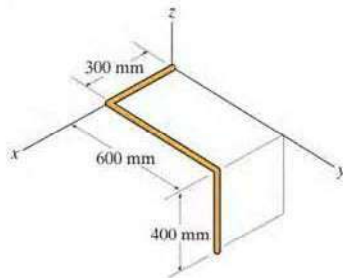


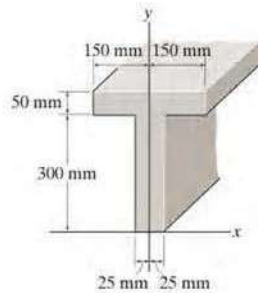
FUNDAMENTAL PROBLEMS

F9-7. Locate the centroid $(\bar{x}, \bar{y}, \bar{z})$ of the wire bent in the shape shown.



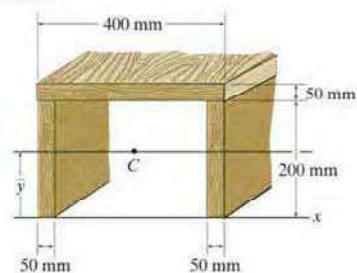
F9-7

F9-8. Locate the centroid \bar{y} of the beam's cross-sectional area.



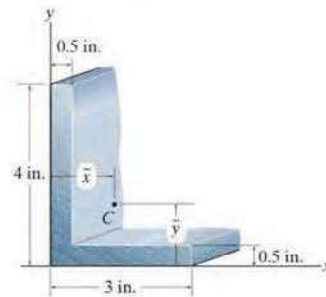
F9-8

F9-9. Locate the centroid \bar{y} of the beam's cross-sectional area.



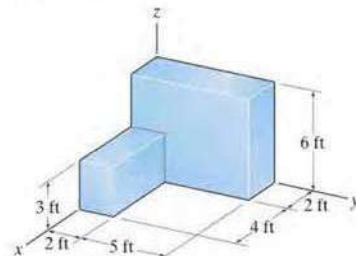
F9-9

F9-10. Locate the centroid (\bar{x}, \bar{y}) of the cross-sectional area.



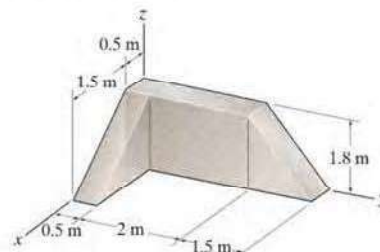
F9-10

F9-11. Locate the center of mass $(\bar{x}, \bar{y}, \bar{z})$ of the homogeneous solid block.



F9-11

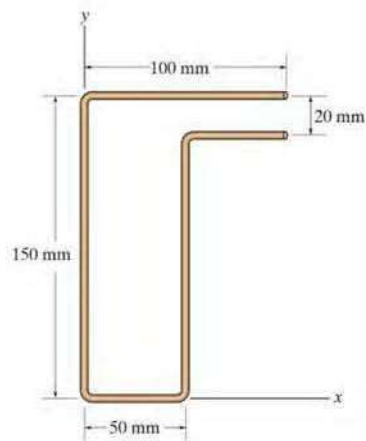
F9-12. Determine the center of mass $(\bar{x}, \bar{y}, \bar{z})$ of the homogeneous solid block.



F9-12

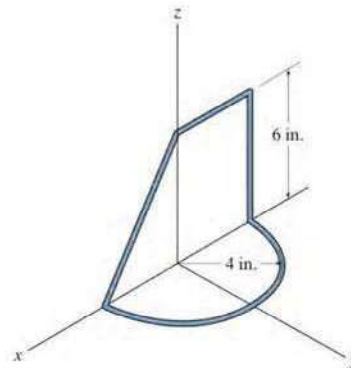
PROBLEMS

9-44. Locate the centroid (\bar{x}, \bar{y}) of the uniform wire bent in the shape shown.



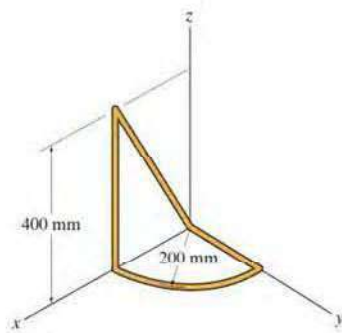
Prob. 9-44

9-46. Locate the centroid $(\bar{x}, \bar{y}, \bar{z})$ of the wire.



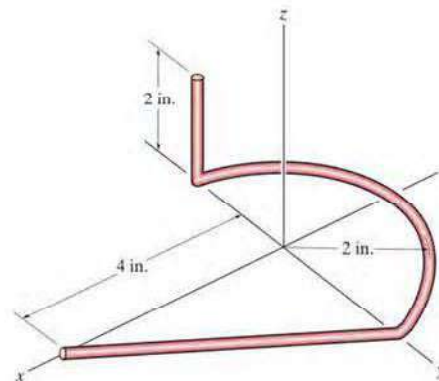
Prob. 9-46

9-45. Locate the centroid $(\bar{x}, \bar{y}, \bar{z})$ of the wire.



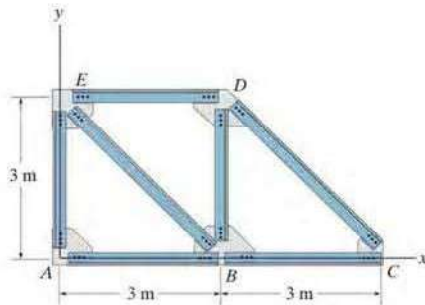
Prob. 9-45

9-47. Locate the centroid $(\bar{x}, \bar{y}, \bar{z})$ of the wire which is bent in the shape shown.



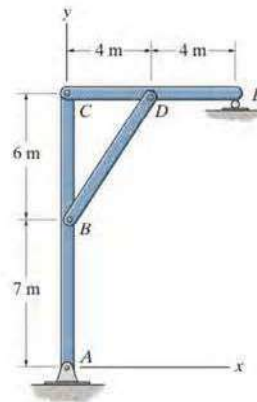
Prob. 9-47

***9–48.** The truss is made from seven members, each having a mass per unit length of 6 kg/m. Locate the position (\bar{x}, \bar{y}) of the center of mass. Neglect the mass of the gusset plates at the joints.



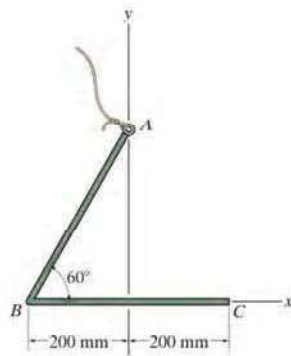
Prob. 9–48

9–50. Each of the three members of the frame has a mass per unit length of 6 kg/m. Locate the position (\bar{x}, \bar{y}) of the center of mass. Neglect the size of the pins at the joints and the thickness of the members. Also, calculate the reactions at the pin A and roller E.



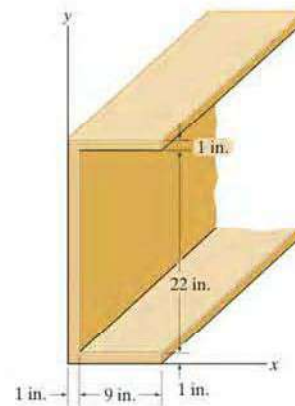
Prob. 9–50

•9–49. Locate the centroid (\bar{x}, \bar{y}) of the wire. If the wire is suspended from A, determine the angle segment AB makes with the vertical when the wire is in equilibrium.



Prob. 9–49

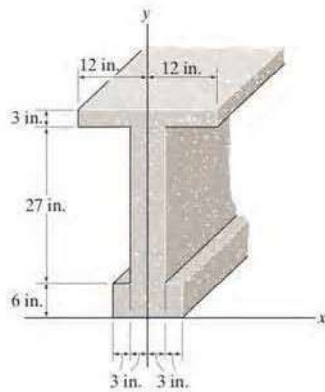
9–51. Locate the centroid (\bar{x}, \bar{y}) of the cross-sectional area of the channel.



Prob. 9–51

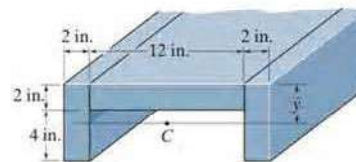
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*9-52. Locate the centroid \bar{y} of the cross-sectional area of the concrete beam.



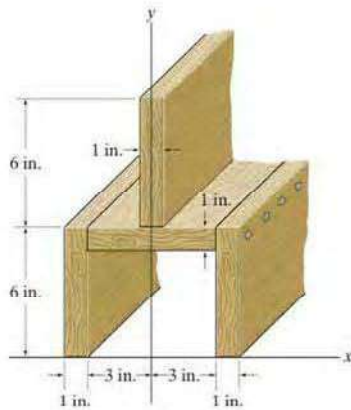
Prob. 9-52

9-54. Locate the centroid \bar{y} of the channel's cross-sectional area.



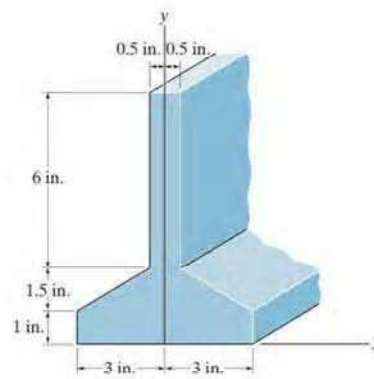
Prob. 9-54

•9-53. Locate the centroid \bar{y} of the cross-sectional area of the built-up beam.



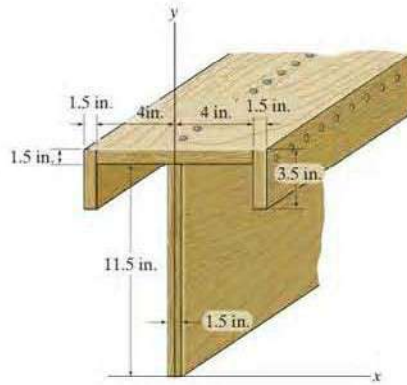
Prob. 9-53

9-55. Locate the distance \bar{y} to the centroid of the member's cross-sectional area.



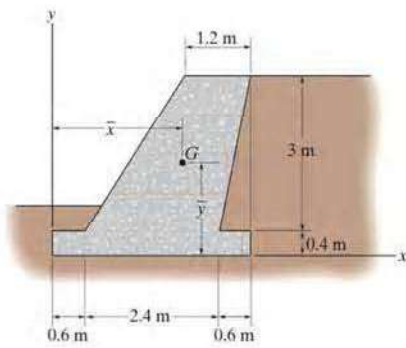
Prob. 9-55

*9-56. Locate the centroid \bar{y} of the cross-sectional area of the built-up beam.



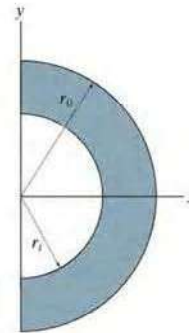
Prob. 9-56

•9-57. The gravity wall is made of concrete. Determine the location (\bar{x}, \bar{y}) of the center of mass G for the wall.



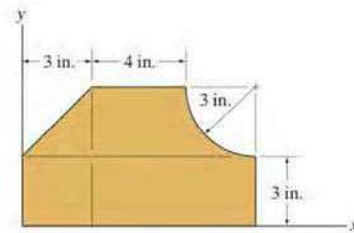
Prob. 9-57

9-58. Locate the centroid \bar{x} of the composite area.



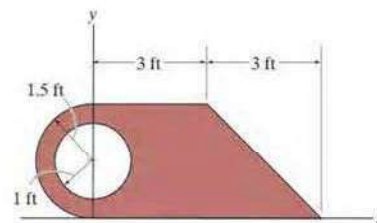
Prob. 9-58

9-59. Locate the centroid (\bar{x}, \bar{y}) of the composite area.



Prob. 9-59

*9-60. Locate the centroid (\bar{x}, \bar{y}) of the composite area.



Prob. 9-60