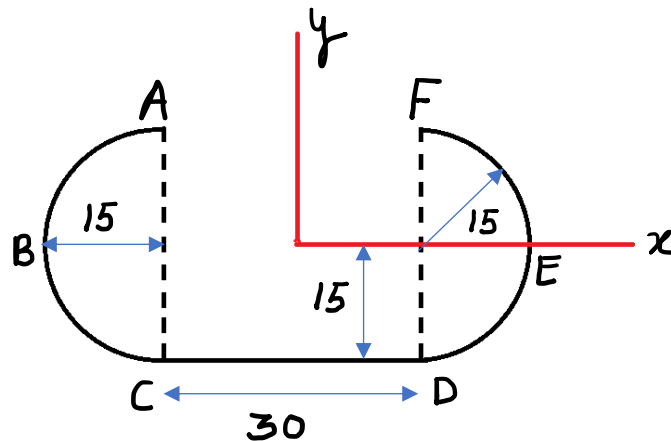


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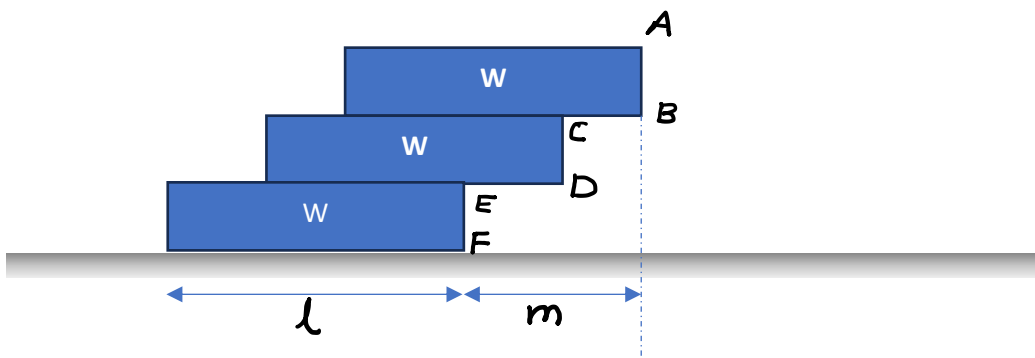
**Engineering Mechanics (CE109)**

**Sessional Sheet II**

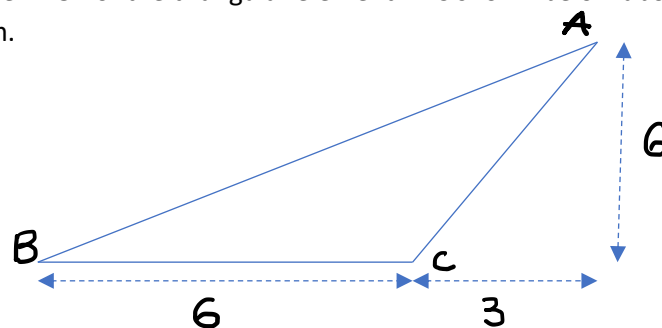
**QUES-1.** A rod has been bent into the shape ABCDEF as shown below. Determine the position of its centroid. All dimensions are in cm.



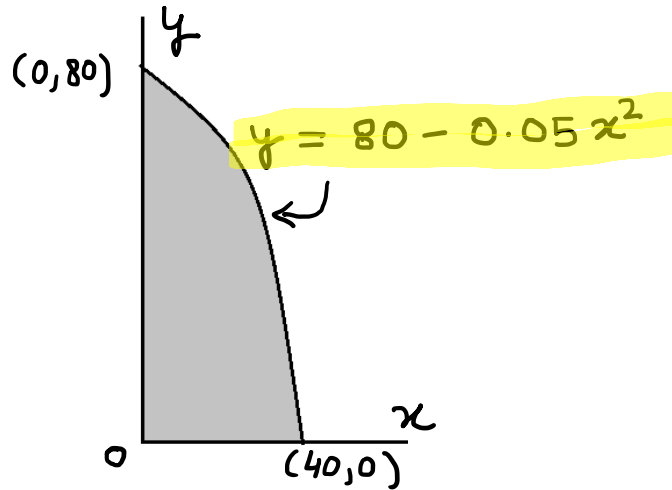
**QUES-2.** Three identical boxes, each having length  $l$  and weight  $w$ , are placed as shown below. Find out the maximum possible distance  $m$  through which the top box can extend out from the bottom so that there is no possibility of the toppling of the stack.



**QUES-3.** Calculate the M.O.I of the triangular element ABC shown below about its centroid axes. All dimensions are in cm.



**QUES-4.** Determine the M.O.I and radius of gyration w.r.t. y-axis and also about its y-y axis of the area enclosed by the curve  $y = 80 - 0.05x^2$  and the lines  $x=0$  and  $y=0$  in first quadrant where  $x$  and  $y$  in mm.



Subject Coordinator: Dr. Priyanka Dhurvey