

# QUESTION

Figure 1 shows the cross-section of a beam of length  $L$  and depth  $2h$ . The beam is subjected to a uniformly distributed load  $w$  acting downwards. The beam is supported by a pin support at the left end and a roller support at the right end. The beam is divided into three segments: Segment 1 (from  $x=0$  to  $x=L/3$ ), Segment 2 (from  $x=L/3$  to  $x=2L/3$ ), and Segment 3 (from  $x=2L/3$  to  $x=L$ ). The beam is divided into three segments by two vertical lines at  $x=L/3$  and  $x=2L/3$ . The beam is divided into three segments by two vertical lines at  $x=L/3$  and  $x=2L/3$ .

Using the method of sections, determine the shear force and bending moment distributions along the length of the beam. Plot the shear force and bending moment diagrams on the axes provided. The shear force diagram is shown on the left and the bending moment diagram is shown on the right. The shear force diagram is shown on the left and the bending moment diagram is shown on the right.



Figure 2 shows the cross-section of a beam of length  $L$  and depth  $2h$ . The beam is subjected to a uniformly distributed load  $w$  acting downwards. The beam is supported by a pin support at the left end and a roller support at the right end. The beam is divided into three segments: Segment 1 (from  $x=0$  to  $x=L/3$ ), Segment 2 (from  $x=L/3$  to  $x=2L/3$ ), and Segment 3 (from  $x=2L/3$  to  $x=L$ ). The beam is divided into three segments by two vertical lines at  $x=L/3$  and  $x=2L/3$ . The beam is divided into three segments by two vertical lines at  $x=L/3$  and  $x=2L/3$ .

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