

CE 203 STRUCTURAL MECHANICS I

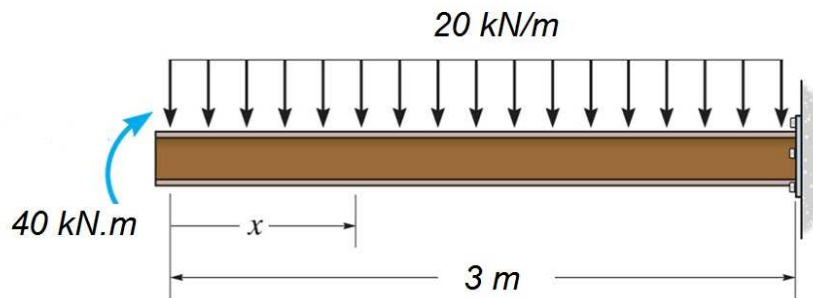
Second Semester 1433 / 2012 (112)

HOMWORK NO. 9

- Textbook Sections Covered: 6.1-6.2, Shear & Moment Diagrams
- DUE DATE: Monday 9 - April - 2012

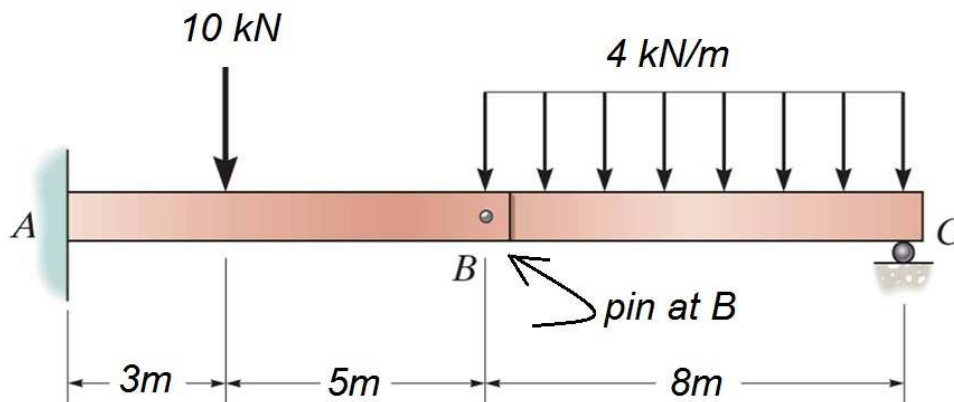
IMPORTANT : When you draw the shear and moment diagrams , you are expected to have clear, complete, and neat sketches that show all the necessary details (numerical values , proper slopes ,degree of curve, concavity, ...etc). Your solution should show the calculation of the necessary areas or distances.

1 – For the given beam, express the shear and moment functions in terms of x , then use these functions to draw the shear and moment diagrams.



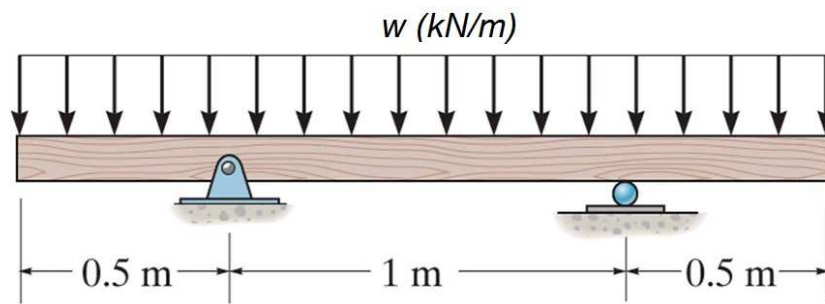
2- For the beam given in Problem (1) above, **change the value of the 40 kN.m moment to be 120 kN.m**, then draw the shear and moment diagrams using the Graphical Method.

3- For the given beam, draw the shear and moment diagrams using the Graphical Method. The beam consists of 2 parts connected at B using a pin.



4- Use the figure and data for problem 6-8 in the textbook, but change the value of the given moment from **0.36 kN.m** to **0.9 kN.m** . Draw the shear and moment diagrams using the Graphical Method.

5- **a)** For the given beam, draw the shear and moment diagrams using the Graphical Method (**Your diagrams should be in terms of the load w**). **b)** Using the diagrams obtained in part (a), determine the maximum absolute value of w (downward load) if the shear in the beam should not exceed ± 5 kN , and the moment in the beam should not exceed ± 2 kN.m.



6- For the given beam, draw the shear and moment diagrams using the Graphical Method.

