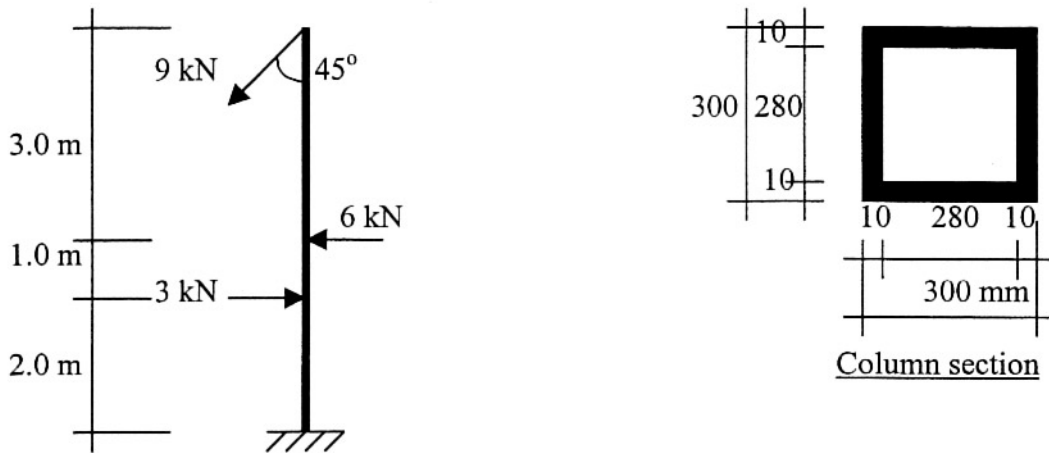


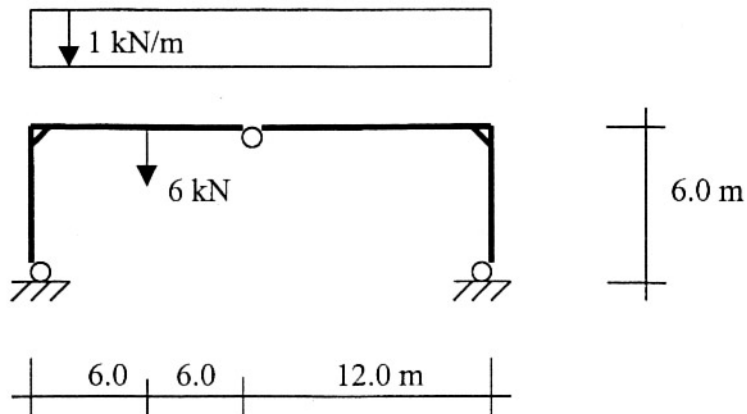
Question 2

Calculate and draw the Shear Force and Bending Moment diagrams for this loaded column. Also calculate the amount of deflection at the top of the column if the column cross section is a square steel tube, as per the drawing below, with an E-value of $200\,000\text{ N/mm}^2$.



Question 3

a) Calculate and draw the Bending Moment diagram for this loaded 3-pin Portal frame. Include all extreme values and any points of contra-flexure.



b) If this frame was changed to a 2-pin portal frame by removing the pin-connection in the rafter, how would that effect the Bending Moment diagram? Sketch the new BMD and comment on the differences. No calculations are required.

END OF QUESTIONS