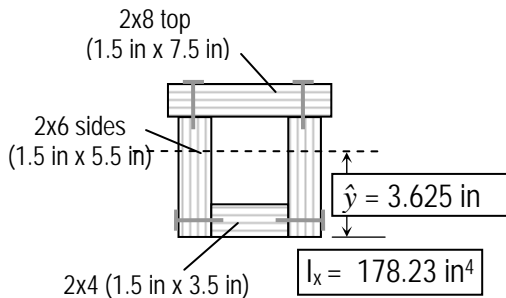
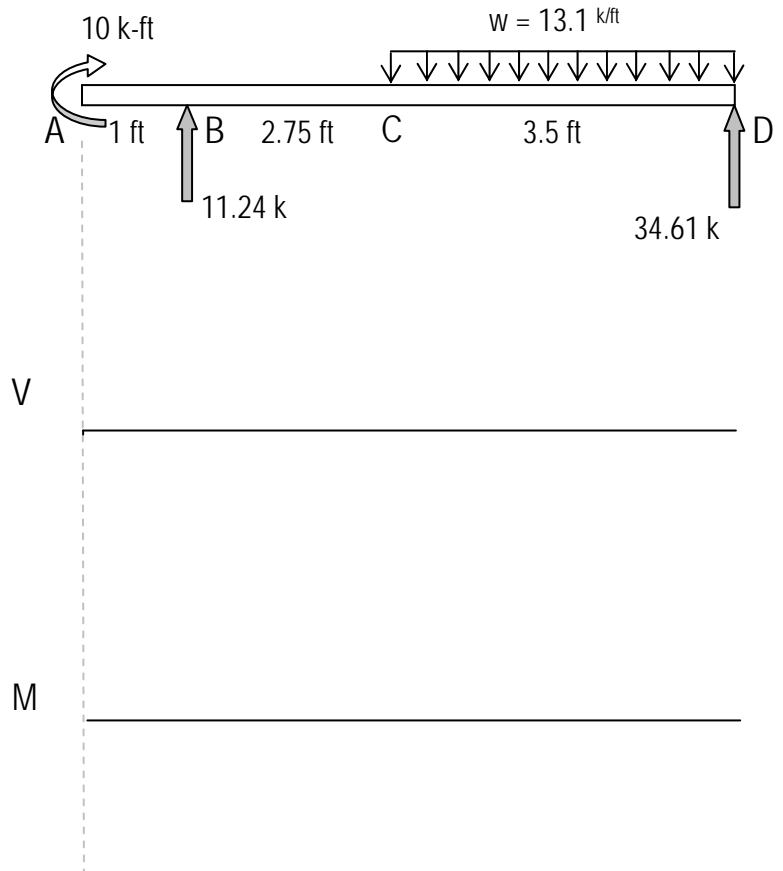


ENDS 231: Practice Quiz 4

Clearly show your work and answer.

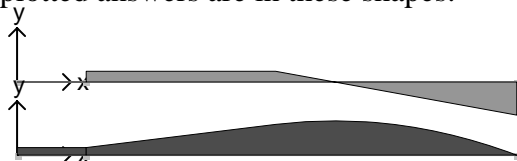
Given the beam with the following loading and support reactions and cross section geometry:

- Complete the shear and bending moment diagrams on the axes provided, and clearly identify and locate the maximum shear and maximum bending moment.
- Find the maximum bending stress for the section.
- Find the maximum shear stress for the section.
- Find the minimum nail capacity required for the bottom 2x4 if the pitch spacing is 2.25 in.
- [some short question from the text material]



Answers:

a) plotted answers are in these shapes:



$V_{max} = -34.61 \text{ k}$ at D, $M_{max} = 45.7 \text{ k-ft}$ at 0.86 ft to right of C

b) $f_b = 11.1 \text{ ksi}$ ($f_{b-top} = 10.8 \text{ ksi}$)

c) $f_v = 2.25 \text{ ksi}$

d) $F = 3.3 \text{ k}$

Disclaimer: Answers have NOT been painstakingly researched.