Please sign and copy this Honor Statement on your Midterm #2.pdf that you upload. Your work will not be graded without this signed Honor Statement.

"I have neither given nor received unauthorized assistance on this Midterm."
Signature: _____

Please upload your work to Midterm #2 in the **Assignments** section of D2L.

#1) For the beam shown:
   a) Draw shear and moment diagrams for the beam. You may use the method of your choice to construct the diagrams. If you use the "Area" method, please show the areas and calculations.
   b) The beam is to be a glued-laminated wood with σ_{all} = 2000 psi. The width of the beam is 3.125". Determine the required depth of the beam.
   c) Now, it's been determined that the beam should be a wide-flange steel beam. Choose the most economical wide-flange shape with a σ_{all} = 24000 psi.
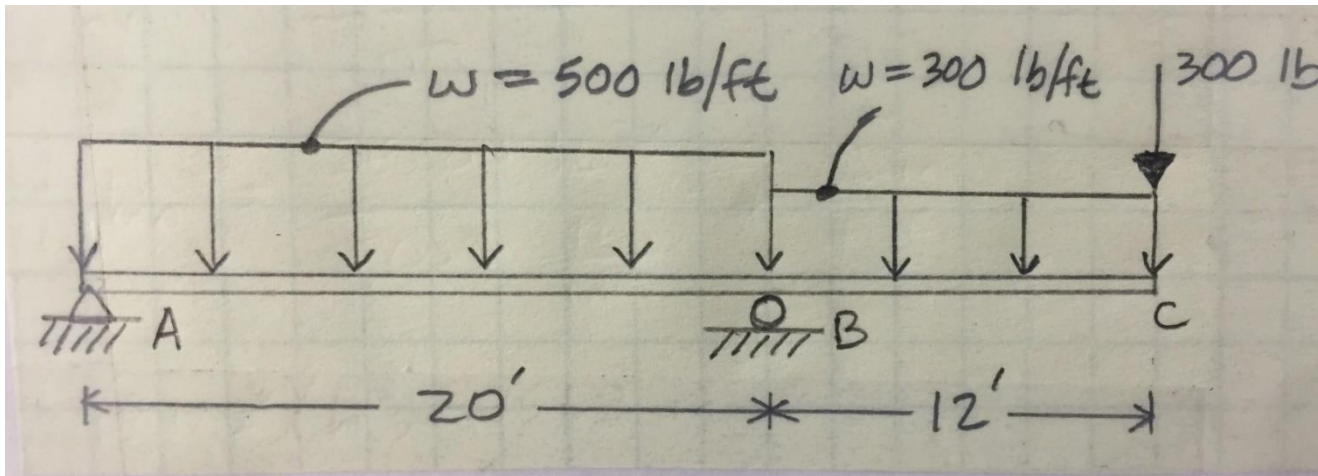
#2) For the W4x13 beam shown below, <u>determine the V and M at a section located at **midspan**</u> (make a cut at midspan (x = 5 ft from the left end) or make V and M diagrams and determine V and M at midspan).

For that midspan section, find:
a) The shearing stress at the horizontal centroidal or neutral axis (point A). [Note: There are 2 ways to calculate this with one way an approximation. Either method will be acceptable.]
b) The shearing stress in the web at the point where the web joins the flange (point B).
c) The shearing stress at point C using a vertical section.
d) The shearing stress at point D.
e) In what longitudinal axis, does τ_{max} occur (A, B, C or D)?