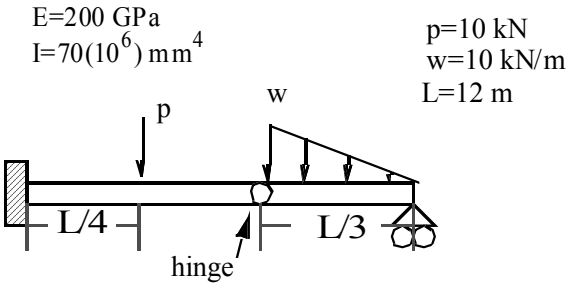
Example write up for the Visual Analysis homework sets.



The homework requires a write-up including:
Problem statement
a picture of the deformed shape
moment diagram from VA
table with displacements

We'll use the first HW#9 problem as an example.

Problem Statement is an illustration of the problem. This should be the homework coversheet and the VA picture of your completed model. Note that I have turned the nodal numbering on using View -> View Manager

Hint: Zoom into your model first, then go to Edit -> copy. Now within MS Word, choose Edit -> Paste Special, and choose the 'Picture' option. This version will be readable and not take up lots of memory. I place the figures and captions within table cells to help them flow with the text. You can see this in Figure 1 below. All the other figures in this document are also in tables, but I turned off the table outlines.

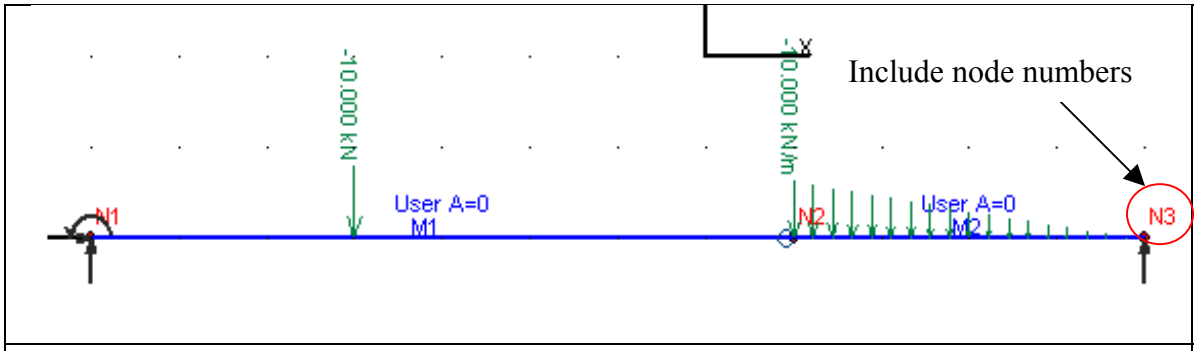


Figure 1: Visual Analysis of the model for problem 1, HW#9

Deformed Shape can be copied and pasted from VA as well

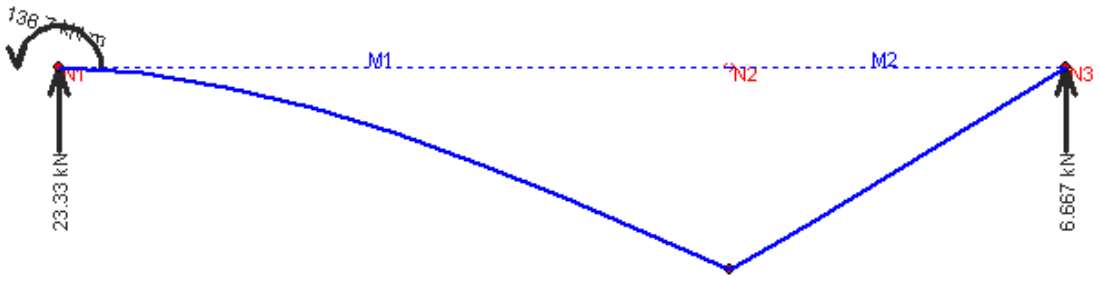


Figure 2: Visual Analysis of the displaced shape for problem 1, HW#9

Moment / Shear Diagrams can also be copied from VA, please display on the <u>un-deformed</u> shape. Note that the shear diagram does not have the vertical jump at the concentrated load. Why is this?

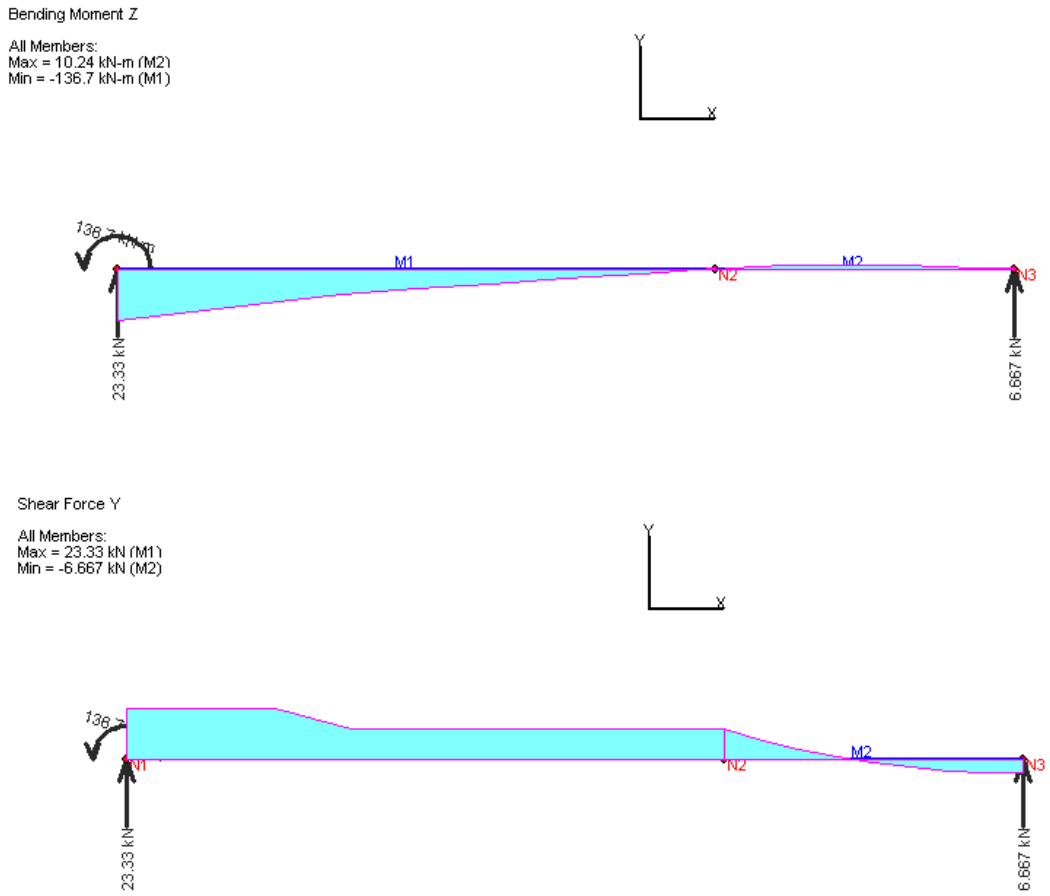


Figure 3: Visual Analysis of the Moment and Shear for problem 1, HW#9

Table with displacements: This should also include reactions and internal forces. Get this information by looking at the displaced shape or the moment diagrams, and then going to View -> Quick Report. We will copy and paste this information, then cut out the extra stuff. In this case you only need to include the internal forces at the ENDS of the members, so I cut out the stuff between the ends. Note that without the node numbering turned on in the figures above, I have no way of knowing where these numbers belong on the pictures.

Note 1: The moments at the ends of the members have already been corrected by VA to account for the actual loading. VA uses equivalent nodal loading to conduct the analysis, then performs the superposition we discussed in class on the results to get the correct reactions and internal forces.

Note 2: You will notice when you try the second homework problem (the truss) that you can only apply the horizontal component of the angled concentrated load. VA will not let you apply a concentrated load at a reaction, so you will have to correct the reaction after the analysis by hand.

Nodal Displacements

Node	Load Case	DX *m*	DY *m*	RZ *rad*
N1	Service Case 1	**0.00000000**	**-0.00000000**	**-0.00000012**
N2	″	0.00000000	**-0.18508881**	0.04525606
N3	″	0.00000000	-0.00000000	**0.04716132**

Nodal Reactions

Node	Load Case	FX *kN*	FY *kN*	MZ *kN-m*
N1	Service Case 1	**0.00000000**	**23.33333333**	**136.67**
N3	″	-NA-	**6.66666667**	-NA-

Member Internal Forces

Member	Load Case	Offset *m*	Axial *kN*	Vy *kN*	Mz *kN-m*
M1	Service Case 1	0.00000000	**0.00000000**	**23.33333333**	**-136.67**
″	″	8.00000000	0.00000000	13.33333333	0.00000000
M2	″	0.00000000	0.00000000	13.33333333	-0.00000000
″	″	4.00000000	0.00000000	**-6.66666667**	0.00000000