

Announcements

- Check course schedule for assignments, activities and written exams dates (especially if you're in TAM 210)

☐ Upcoming deadlines:

- Friday (10/19)
 - Written Assignment
- Tuesday (10/23)
 - PrairieLearn HW



Recap: Internal Loadings

Structural Design: need to know the loading acting within the member in order to be sure the material can resist this loading



Objective

- Determine the internal loadings in members using the method of sections

Internal Forces and Moment

Normal force (**N**):

Shear force (**V**):

Bending moment (**M**):

Sign conventions

Positive normal force

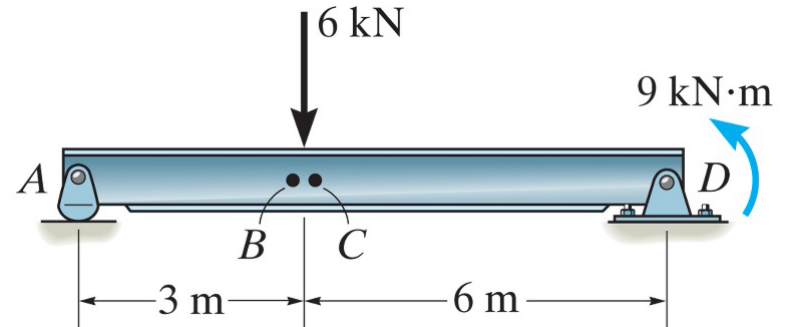
Positive shear force

Positive moment

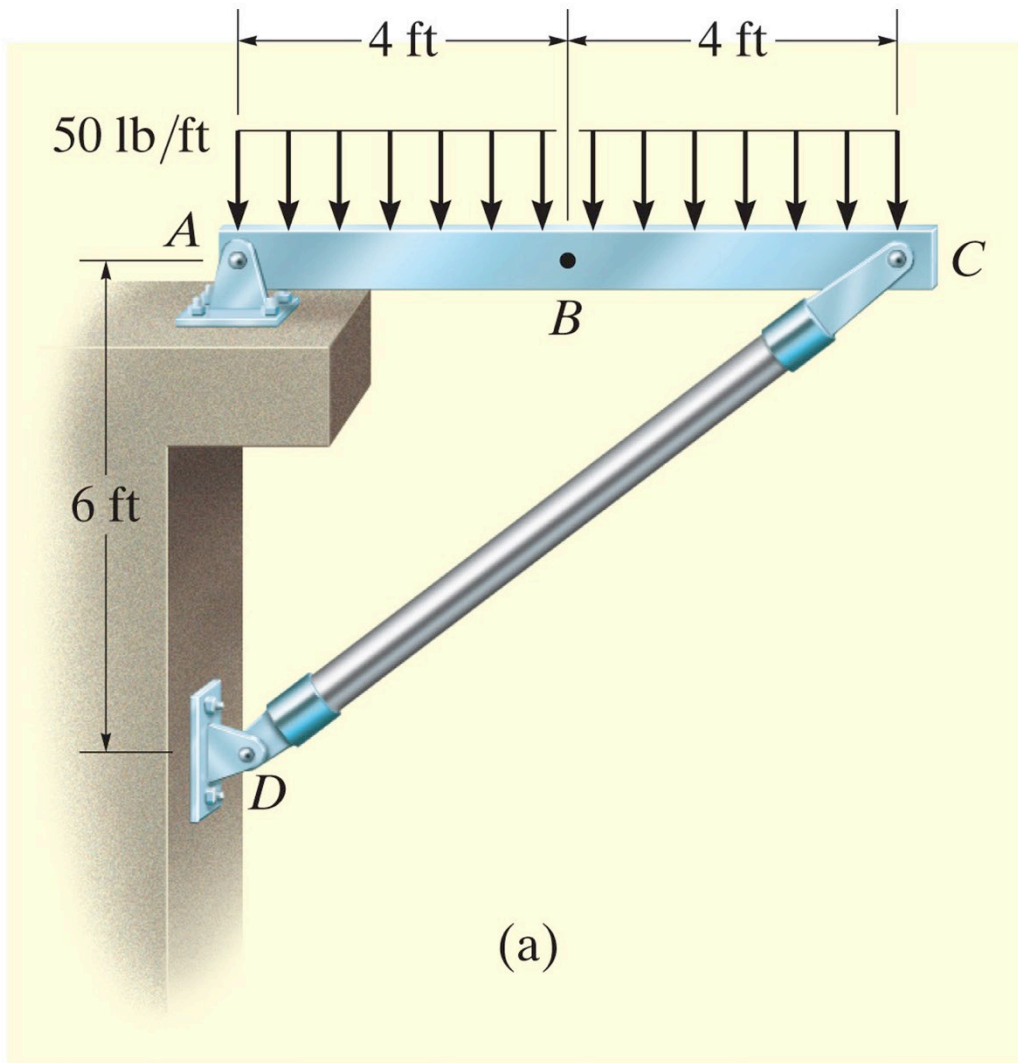
Procedure for analysis

1. Find support reactions (free-body diagram of entire structure)
2. Pass an imaginary section through the member
3. Draw a free-body diagram of the segment that has the least number of loads on it
4. Apply the equations of equilibrium

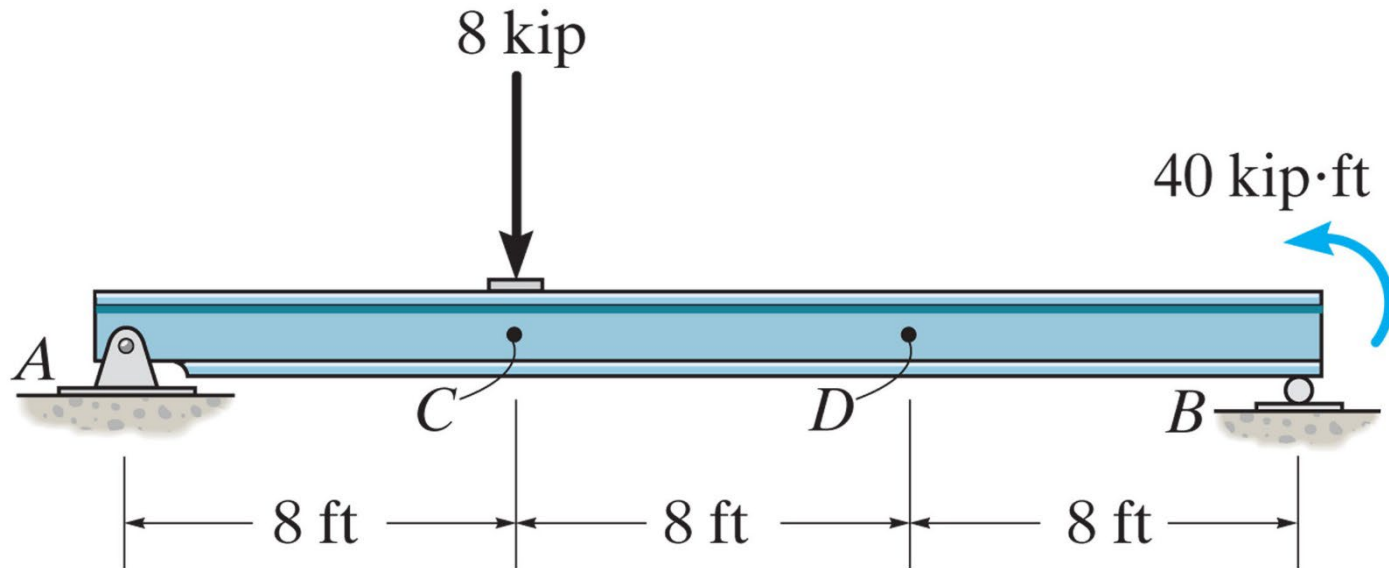
Example: Find the internal forces and moments at B (just to the left of P) and at C (just to the right of P)

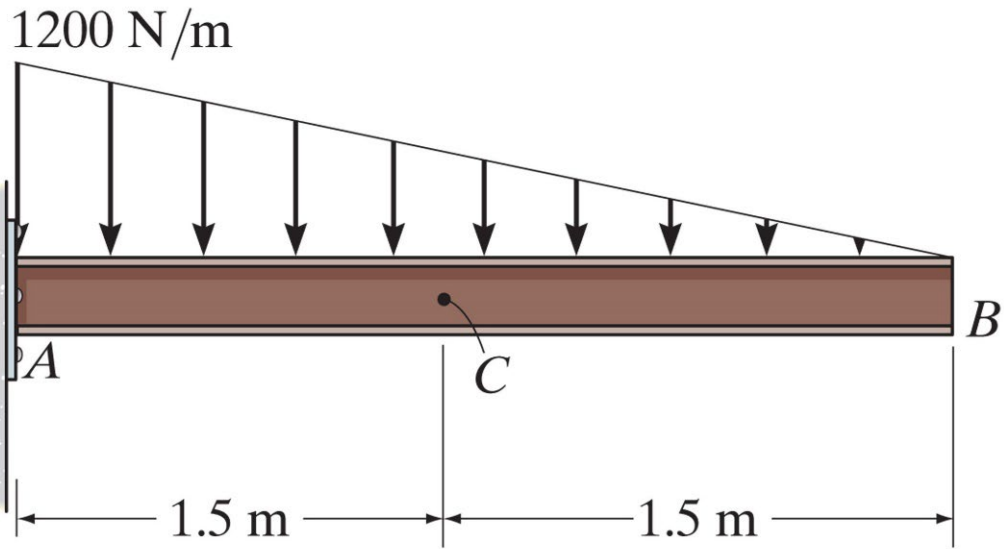


Determine the normal force, shear force, and bending moment at B .



Determine the normal force, shear force, and bending moment at D .





Determine the normal force, shear force, and bending moment at C of the beam.

Determine the normal force, shear force, and bending moment at C .

