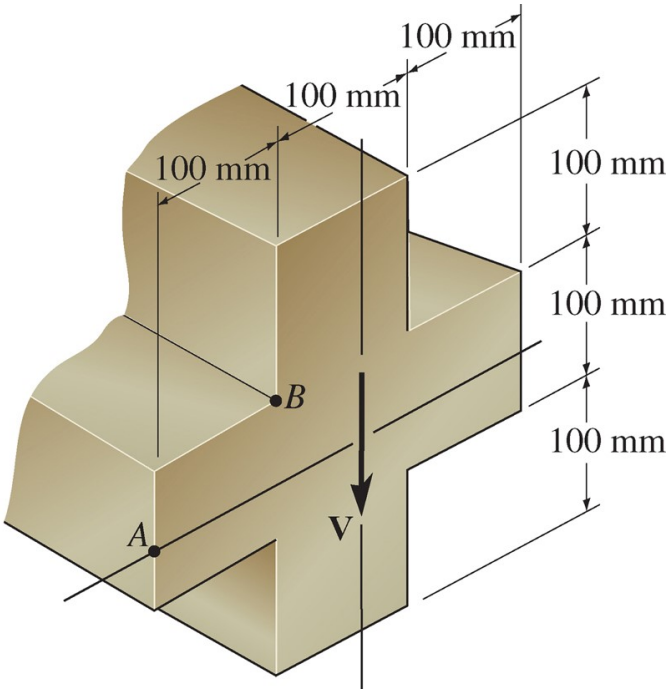
Name:

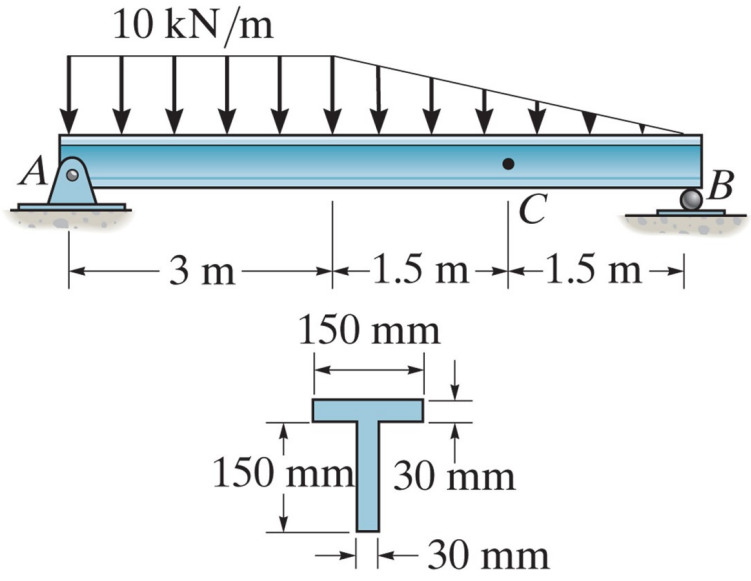
Homework 6

Due 29 March 2021

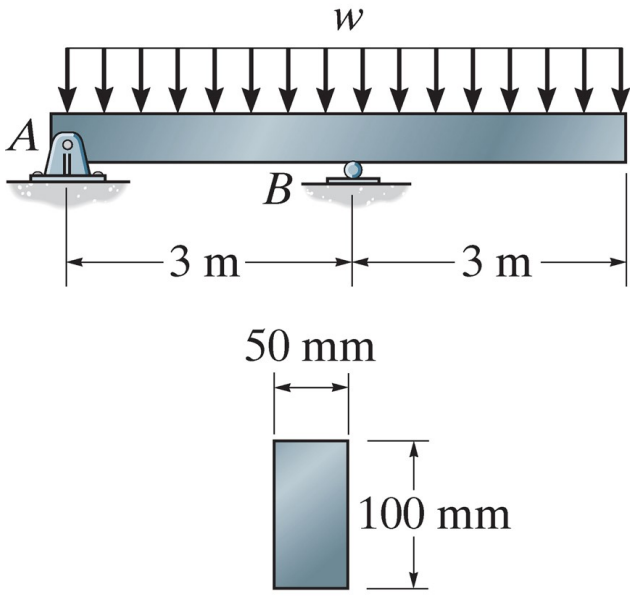
1. Find the shear stress at points A and B when $V = 450\,\text{kN}$. Draw the state of stress on a volume element at each point.



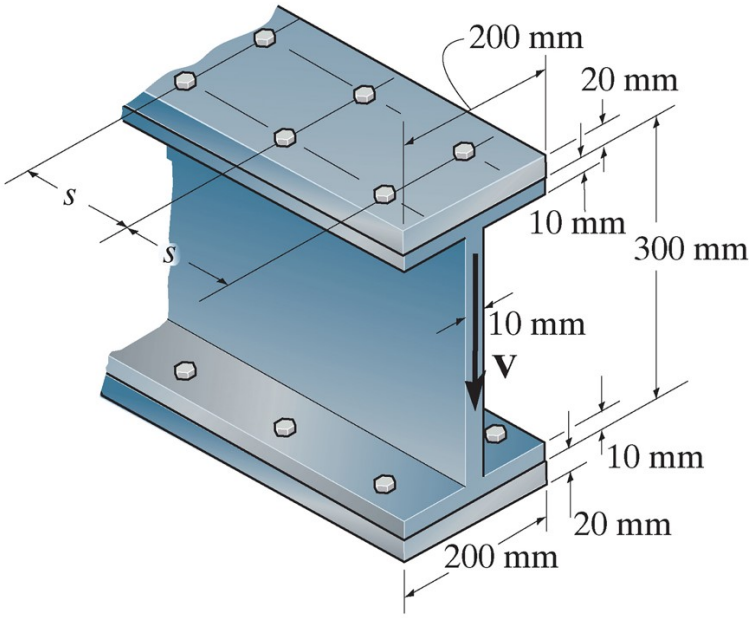
2. Find the maximum shear stress acting on the beam shown.



3. The overhanging beam is subjected to a uniform load of $w = 75\,\text{kN/m}$. Find the maximum shear stress in the beam.



4. Two identical 20 mm plates are bolted to the top and bottom of a flange to form a built-up beam. For a shear force of $V = 400\,\text{kN}$ find the maximum bolt spacing, s, if each bolt has a shear strength of 45 kN



5. The beam shown is made by gluing two 1/2 in c-channel strips together as sown. If the glue has a maximum shear stress of $\tau = 600$ psi find the maximum intensity, w_0, of the triangular distributed loading.