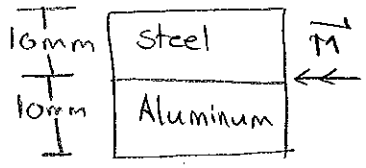
I



If a moment $|\vec{M}| = 200\,N \cdot m$ is applied as shown, find the maximum stresses in the steel and the aluminum parts.

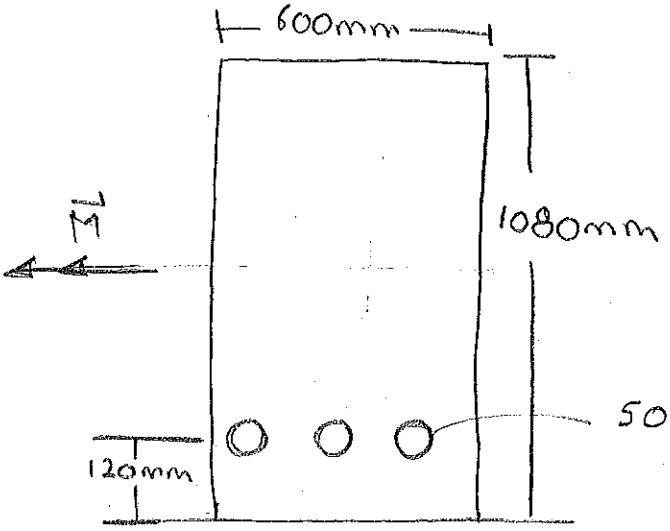
let $E_{steel} = 210\,GPa$

$E_{Al} = 70\,GPa$.

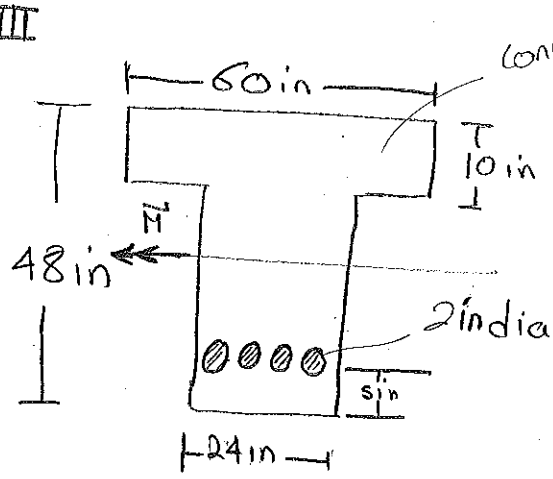
II The beam shown is made of concrete and steel as shown below. Find the maximum stresses in the steel and concrete if the beam is subjected to a moment $|\vec{M}| = 200\ kN.m$

$E_{steel} = 200\ GPa$

$E_{concrete} = 25\ GPa$



III



If a moment $|\vec{M}| = 300$ kip is applied as shown find the maximum stresses in the steel and Concrete.

let $E_{steel} = 30\ 10^6$ psi

$E_{concrete} = 3.75 \times 10^6$ psi