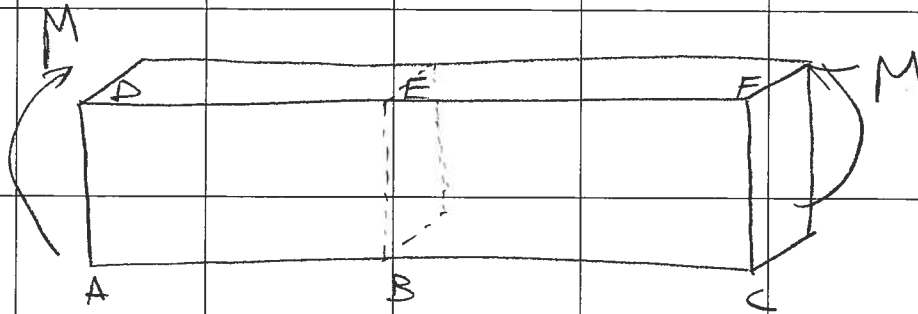
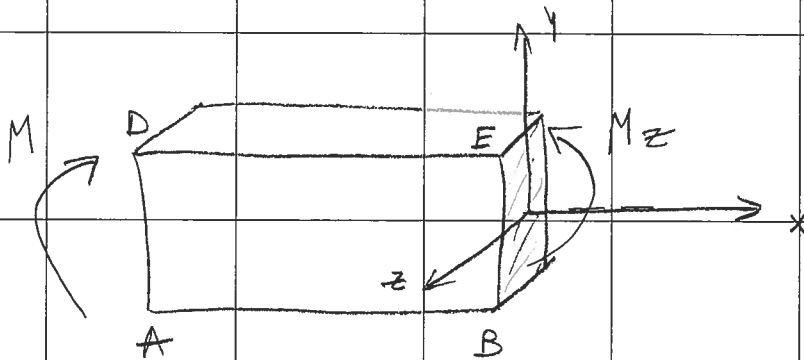


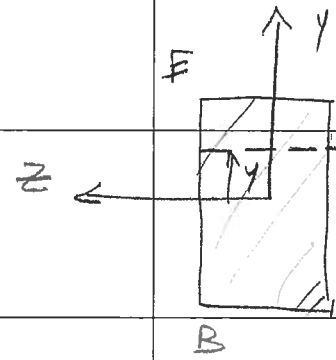
Flexure Formula



Beam in Pure Bending



Free Body Diagram of Left Section

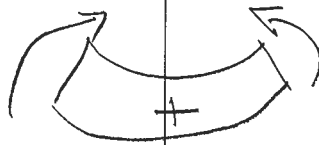


Cross-Section of Beam

$$\sigma_x = - \frac{M_z y}{I_z}$$

σ_x - normal stress acting on cross-section in the x-direction caused by the moment M_z

M_z - internal moment about the z-axis of the beam cross-section. This moment is the result of external loadings in the x-y plane. It is usually found from a free body diagram or a moment diagram



Positive Moment



Negative Moment

y - vertical distance measured positive upward from the z-axis which is coincident with the neutral axis or centroidal axis of the beam cross-section.

I_z	-	area moment of inertia of the beam cross-section taken about the z-axis that is coincident with the neutral axis or centroidal axis of the beam cross-section.				