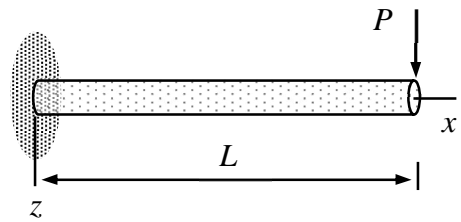


Name _____ Student number _____

Assignment 3

Find the transverse displacement w and rotation θ of the xz -plane cantilever beam shown. Start with the Bernoulli beam model planar bending equations in their first order forms



$$\begin{Bmatrix} \frac{dQ}{dx} \\ \frac{dM}{dx} - Q \end{Bmatrix} = 0, \quad \begin{Bmatrix} M \\ 0 \end{Bmatrix} = \begin{Bmatrix} EI \frac{d\theta}{dx} \\ \frac{dw}{dx} + \theta \end{Bmatrix},$$

where E and I are constants and Q , M are the shear force and bending moment, respectively,