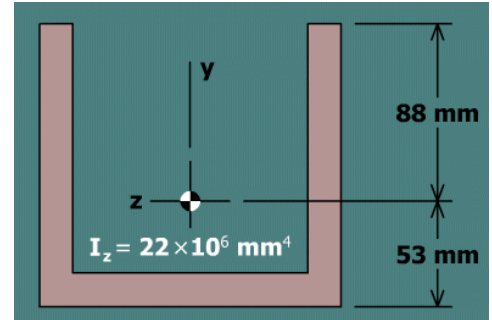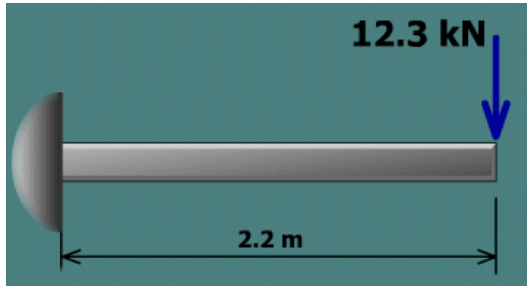For the beam and cross section shown below, compute the maximum tension and compression bending stresses produced at any location along the beam span. *Write your answer in the box at the bottom of the page.*



$$M = (12.3 \times 10^3)(2.2) = 27060 \ N \cdot m$$

$$I = 22 \times 10^6 \ mm^4 = 22 \times 10^{-6} \ m^4$$

top (T)

$$\sigma = \frac{My}{I} = \frac{27060(.088)}{(22 \times 10^{-6})} = 108.24 \ MPa \ (T)$$

bottom (c)

$$\sigma = \frac{My}{I} = \frac{27060(.053)}{(22 \times 10^{-6})} = 65.19 \ MPa \ (C)$$

Max. Tension Bending Stress =

Max. Compression Bending Stress =