



FIG. 2

- (a) Calculate the maximum bending moment
- (b) Calculate the maximum stress in the beam
- (c) At the point of maximum stress sketch a graph of the stress distribution through the thickness of the beam, indicating which are tensile and compressive stresses.
- (d) Determine the dimensions of the cross section which will minimise the maximum stress value if:
 - the cross sectional area of the beam can be increased by 20%
 - the beam section is to remain a solid rectangle
 - neither the breadth or depth of the beam section can be reduced below their original dimensions.

Show the dimensions of the proposed beam cross section with the aid of a sketch.