1. Using the coordinate axes shown, write equations for the shear force \( V(x) \) and bending moment \( M(x) \) for the portion of the beam in the interval \( 2 < x < 4 \) m.

\( \text{(Look at Problem 2 before proceeding.)} \)
2. Draw **complete** shear and moment diagrams for the beam in Problem 1.
3. Determine the maximum and minimum values of weight $W$ which may be applied without causing the 50-lb block to slip. The coefficient of static friction between the block and the inclined plane is $s_1 = 0.2$ and between the rope and the fixed drum is $s_2 = 0.3$. 
4. Locate the x-centroid of the cross-sectional area.