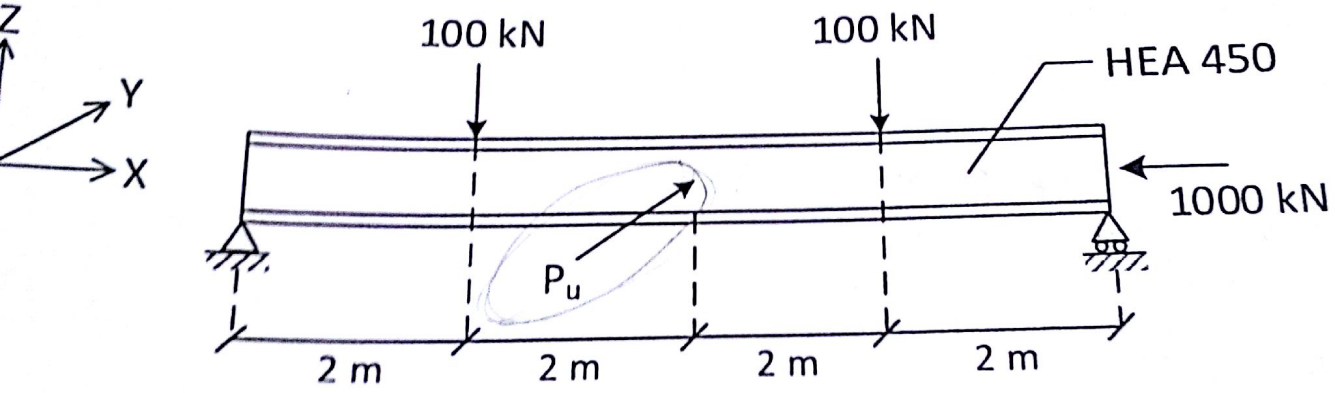
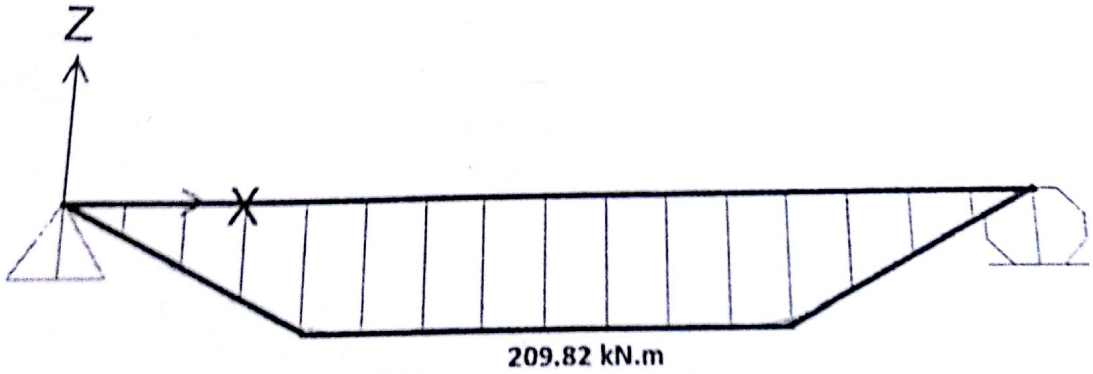
3. Determine the value of the point load, P_u, in the Y direction for the given structure. Use S275 (F_y (σ_y)= 275 MPa, F_u (σ_u)= 430 MPa) steel and LRFD. The moment diagram for the moments in Y direction is also given below. The units of the moments are in kN.m. You can assume that the second order moments in Z direction are 24% larger than the first order moments. The beam is laterally supported only at the supports. The support conditions in the weak axis are both pin supports.



ents in Y-direction (in kN.m)



ine Pc

1000 kN

$\frac{8000}{77.9} = 109.2 < 4.71\sqrt{\frac{E}{F_y}}$