The beam in the figure below is loaded by the constant distributed load (*f*) and the bending moment (M). The beam and cross section dimensions are shown in the figure. The material of the beam is characterized by the Young modulus $E = 30$ GPa.

For a given structure:

a) Draw the diagrams for the internal forces and bending moment.
b) Plot the deflection along the beam caused by the load.

The checked values are:

- Values of internal forces, bending moments and deflections at all given points (“1-9”) dividing each beam span into four equal intervals.