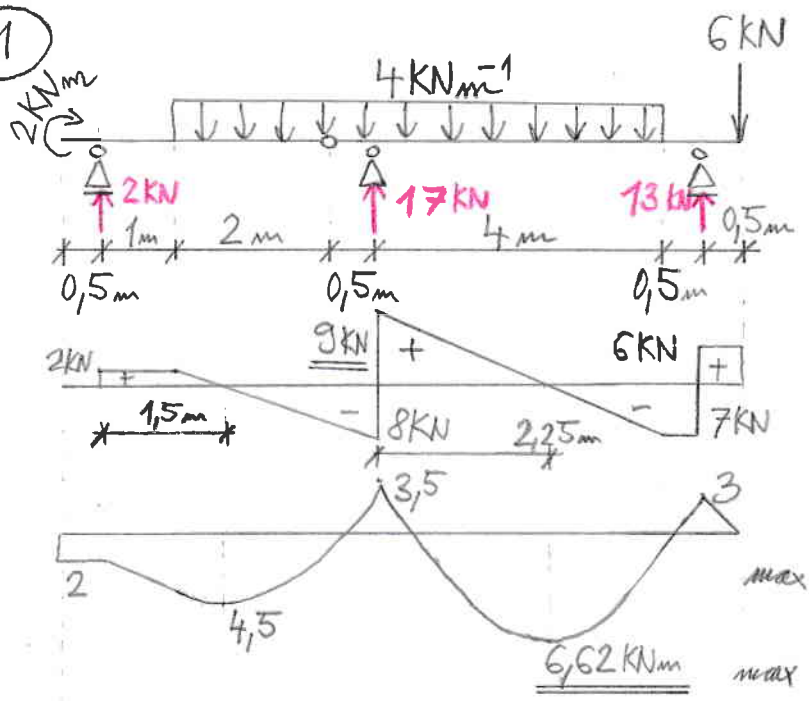
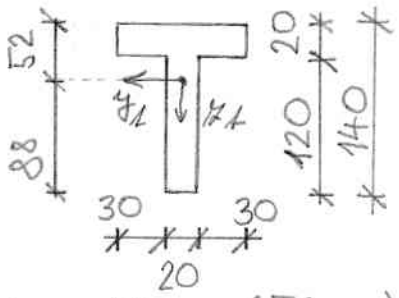
1





$z_1 = 88\ mm\ (52\ mm)$

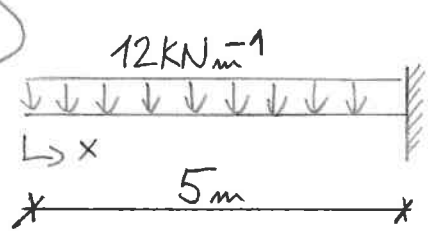
$I_y = 7,637 \cdot 10^{-6}\ m^4$

$S_y = 77,44 \cdot 10^{-6}\ m^3$

$$\max|\sigma_x| = \frac{6,62 \cdot 10^3}{7,637 \cdot 10^{-6}} \cdot 0,088 = \underline{76,28\ MPa}$$

$$\max|\tau_{xz}| = \frac{9 \cdot 10^3 \cdot 77,44 \cdot 10^{-6}}{7,637 \cdot 10^{-6} \cdot 0,02} = \underline{4,56\ MPa}$$

2



EI = konst.

$$M(x) = -12\frac{x^2}{2} = -6x^2$$

$$EI\,w'' = 6x^2$$

$$EI\,w' = c_1 + 6\frac{x^3}{3}$$

$$EI\,w = c_1 \cdot x + c_2 + \frac{x^4}{2}$$

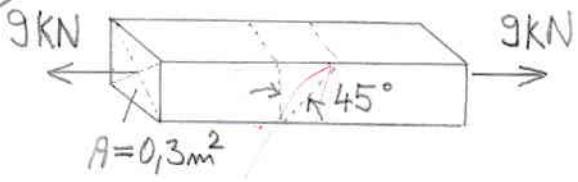
$w'(5) = 0 \Rightarrow c_1 = \underline{-250\ kNm^2}$

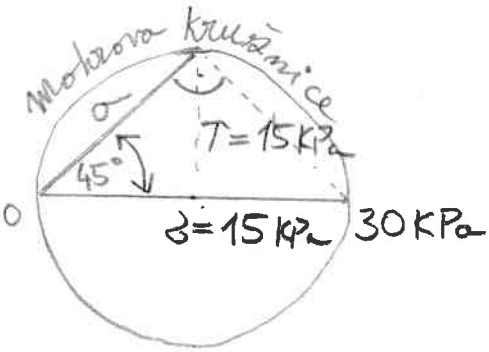
$w(5) = 0 \rightarrow -250 \cdot 5 + c_2 + \frac{5^4}{2} = 0$

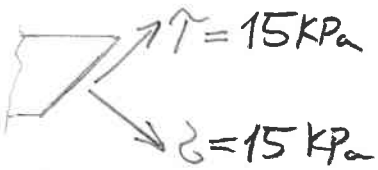
$c_2 = \underline{937,5\ kNm^3}$

$$w(x) = \frac{10^3}{EI} \cdot \left[-250x + 937,5 + \frac{x^4}{2}\right]\ [m]$$

3







$a = 30 \cdot \cos 45° = 21,213\ kPa$

$\sigma = a \cdot \cos 45° = \underline{15\ kPa}$

$\tau = a \cdot \sin 45° = \underline{15\ kPa}$