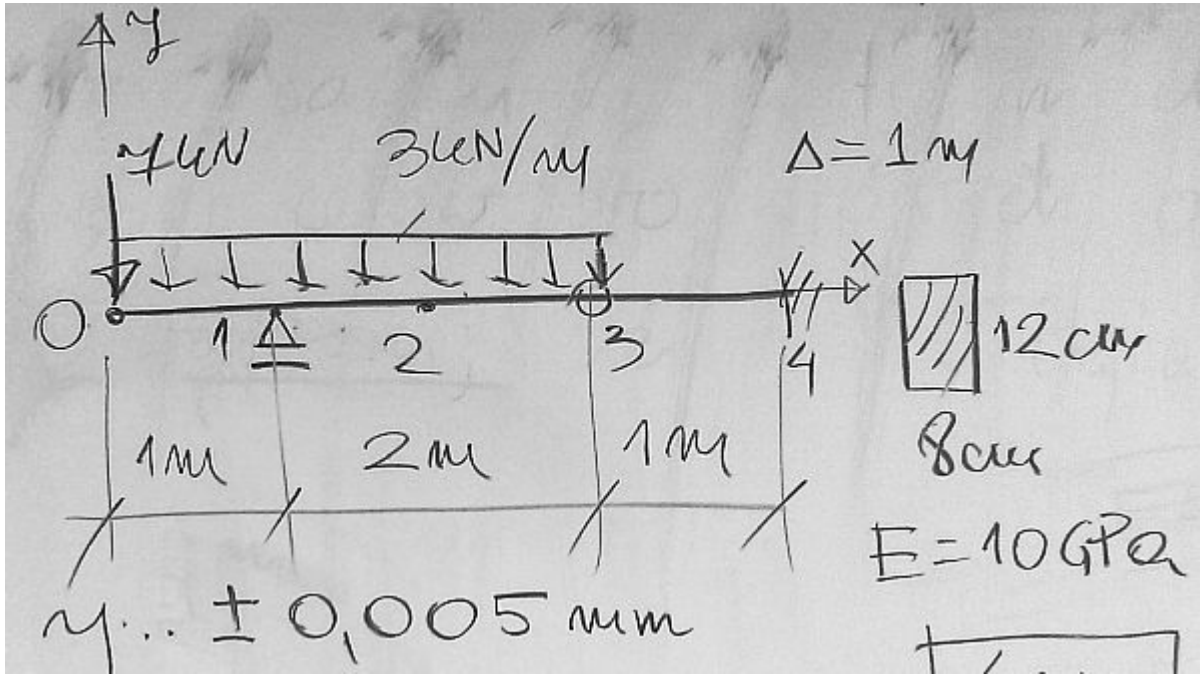
Grupa 2

ORIGIN := 0



$P := 7kN \qquad q := 3\frac{kN}{m}$

$L := 4m \qquad b := 8cm \qquad h := 12cm \qquad J := b \cdot \frac{h^3}{12} \qquad E := 10GPa$

$R1 := \frac{q \cdot 3m \cdot 1.5m + P \cdot 3m}{2m} = 17.25 \cdot kN$

$n := 4 \qquad \Delta := \frac{L}{n} = 1\,m \qquad \alpha := \frac{\Delta^2}{E \cdot J} \qquad \alpha = 8.68056 \times 10^{-3} \cdot \frac{1}{kN}$

$$M1(x) := -q \cdot \frac{x^2}{2} - P \cdot x$$

$$M2(x) := M1(x) + R1 \cdot (x - 1m)$$

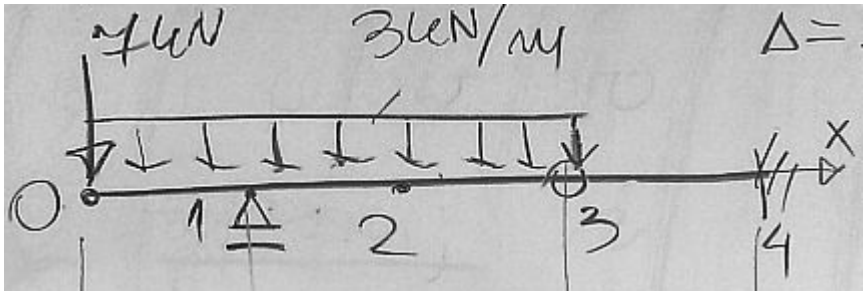
$$M3(x) := M2(x) + q \cdot \frac{(x - 3m)^2}{2}$$

$i := 0 .. \quad n \qquad X_i := i \cdot \Delta$

$i := 0 .. \quad 1 \qquad M_i := M1(X_i)$

$i := 1 .. \quad 3 \qquad M_i := M2(X_i)$

$i := 3 .. \quad n \qquad M_i := M3(X_i)$



$M =$

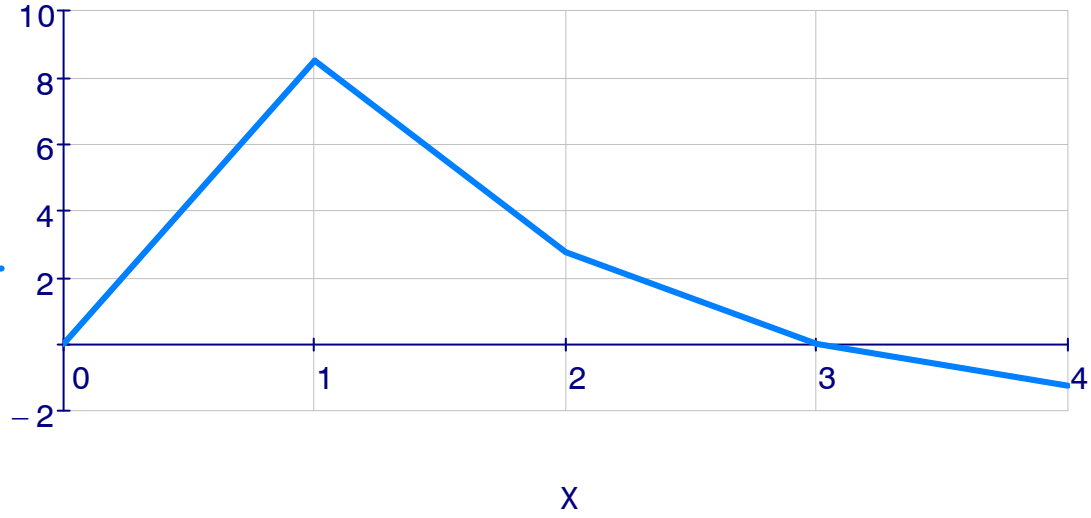
	0
0	0
1	-8.5
2	-2.75
3	0
4	1.25

$\cdot kN \cdot m \qquad X =$

	0
0	0
1	1
2	2
3	3
4	4

m

$\frac{-M}{kN \cdot m}$



Równania MRS

$y_1 = 0 \qquad y_4 = 0 \qquad \varphi_4 = 0$

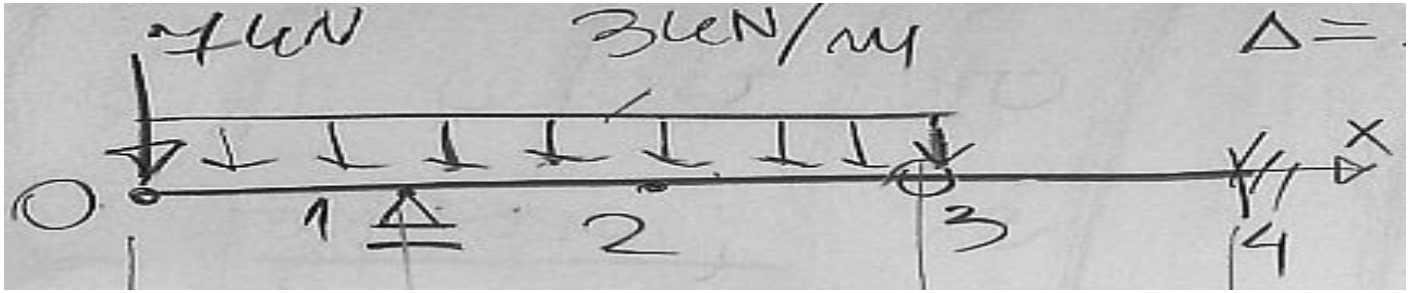
$$y_0 - 2y_1 + y_2 = \alpha M_1 \qquad y_0 + y_2 = \alpha M_1$$
$$y_1 - 2y_2 + y_3 = \alpha M_2 \quad \text{------->} \quad y_2 + y_3 = \alpha M_2$$
$$2y_3 - 2y_4 = \alpha M_4 \qquad 2y_3 = \alpha M_4$$

$$\alpha = 8.681 \cdot \frac{1}{MN}$$

$M =$

	0
0	0
1	-8.5
2	-2.75
3	0
4	1.25

$\cdot kN \cdot m$



$y =$

	0
0	-88.43
1	0
2	14.65
3	5.43
4	0

$\cdot mm$