

Vykreslete průběhy vnitřních sil (N, V, M), určete polohu přechodového průřezu a hodnotu $M_{\max}$ (příp. $M_{\min}$).

U výpočtů zapisujte postup.

$$\sum M_b = 0$$

$$-12 \cdot 1 + 5 \cdot 5 - 4 + R_{ax} \cdot 5 - 5 \cdot 1 - 7 \cdot 7 = 0$$

$$R_{ax} = 9 \text{ kN}$$

$$\sum M_a = 0$$

$$-7 \cdot 2 - 4 + 4 \cdot 12 + 5 \cdot 2 - R_{bz} \cdot 5 = 0$$

$$R_{bz} = 8 \text{ kN}$$

$$\sum F_{iz} = 0 \quad 8 - 12 + 5 - 1 = 0 \Rightarrow 0 = 0$$

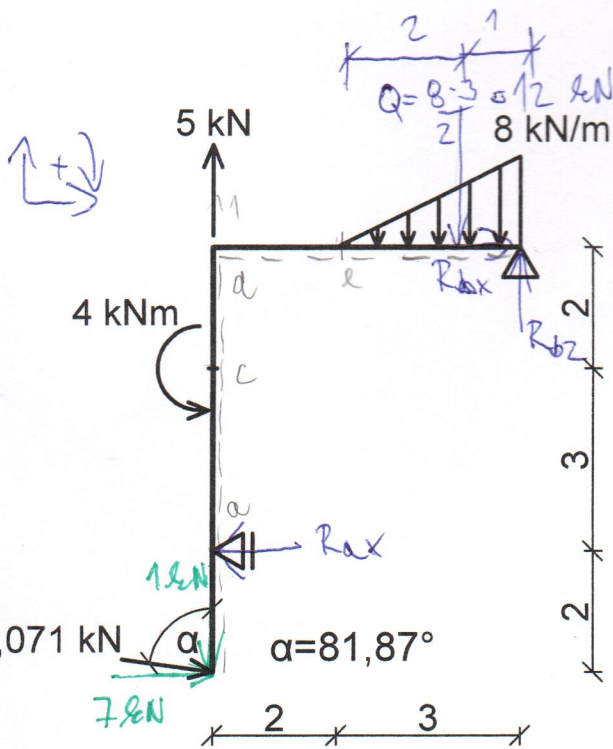
$$M_a = -7 \cdot 2 = -14 \text{ kNm}$$

$$M_c = -7 \cdot 5 + 9 \cdot 3 = -8$$

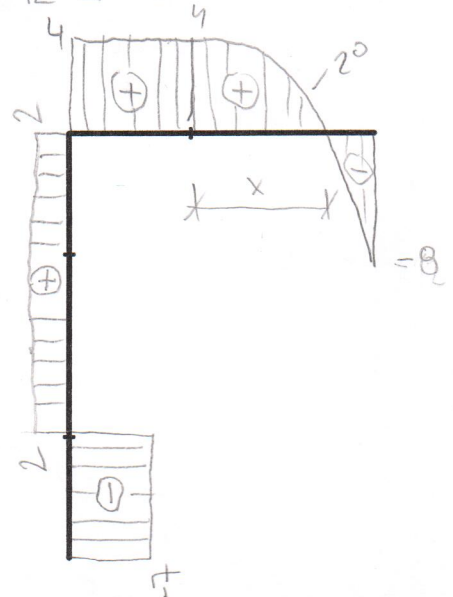
$$M_d = -7 \cdot 7 + 9 \cdot 5 - 4 = -8$$

$$M_d = 8 \cdot 5 - 4 \cdot 12 = -8$$

$$M_e = 8 \cdot 3 - 12 \cdot 2 = 0$$

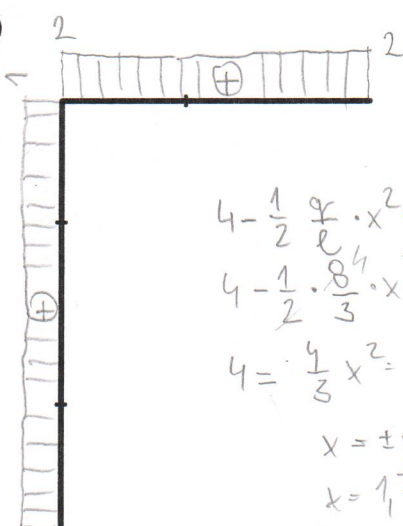


(V)



$$M_{\max} = 0 + \frac{2}{3} \cdot 4 \cdot 1,732 = 4,619 \text{ kNm}$$

(N)



$$4 - \frac{1}{2} \cdot \frac{8}{3} \cdot x^2 = 0$$

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$$4 = \frac{4}{3} x^2$$

$$x = \pm \sqrt{3}$$

$$x = 1,732 \text{ m}$$

(M)

