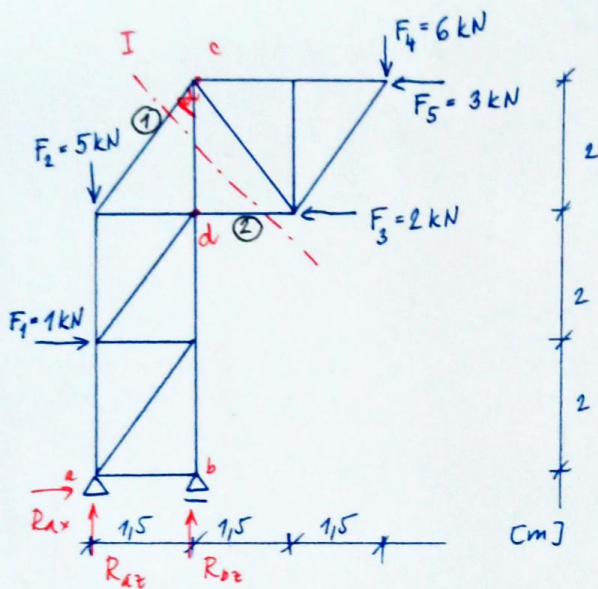


JMÉNO: Strěda J00



VYPOČÍTEJTE:

→ REAKCE

→ VNITŘNÍ SÍLY V PRUTECH 1, 2
(PŘÍSEČNÝM METODOU)

⊕

$$\sum F_{ix} = 0:$$

$$R_{ax} + F_1 - F_3 - F_5 = 0$$

$$R_{ax} = -F_1 + F_3 + F_5 =$$

$$= -1 + 2 + 3 = \underline{\underline{4 \text{ kN} (\rightarrow)}}$$

⊕

$$\sum M_{ia} = 0: -F_1 \cdot 2 + F_3 \cdot 4 + F_5 \cdot 6 - F_4 \cdot 4.5 + R_{b2} \cdot 1.5 = 0$$

$$R_{b2} = \frac{F_1 \cdot 2 - F_3 \cdot 4 - F_5 \cdot 6 + F_4 \cdot 4.5}{1.5} = \frac{1 \cdot 2 - 2 \cdot 4 - 3 \cdot 6 + 6 \cdot 4.5}{1.5} = \underline{\underline{2 \text{ kN} (\uparrow)}}$$

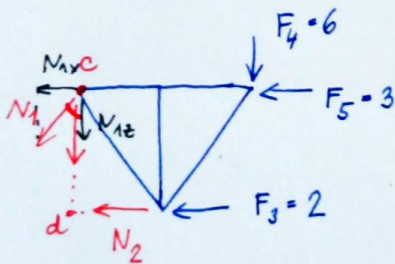
$$\oplus \sum M_{ib} = 0: -R_{a2} \cdot 1.5 - F_1 \cdot 2 + F_2 \cdot 1.5 + F_3 \cdot 4 + F_5 \cdot 6 - F_4 \cdot 3 = 0$$

$$R_{a2} = \frac{-1 \cdot 2 + 5 \cdot 1.5 + 2 \cdot 4 + 3 \cdot 6 - 6 \cdot 3}{1.5} = \underline{\underline{9 \text{ kN} (\uparrow)}}$$

$$K: \sum F_{iz} = 0: R_{a2} + R_{b2} - F_2 - F_4 = 0$$

$$9 + 2 - 5 - 6 = 0 \quad \checkmark$$

řez I:



$$\oplus \sum M_{ic} = 0: -F_4 \cdot 3 - F_3 \cdot 2 - N_2 \cdot 2 = 0$$

$$N_2 = \frac{-F_4 \cdot 3 - F_3 \cdot 2}{2} =$$

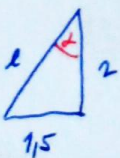
$$= \frac{-6 \cdot 3 - 2 \cdot 2}{2} = \underline{\underline{-11 \text{ kN}}} \quad (\text{tlak})$$

$$\oplus \sum M_{id} = 0: N_{1x} \cdot 2 + F_5 \cdot 2 - F_4 \cdot 3 = 0$$

$$(N_1 \cdot \sin \alpha) \cdot 2 + F_5 \cdot 2 - F_4 \cdot 3 = 0$$

$$N_1 = \frac{-F_5 \cdot 2 + F_4 \cdot 3}{2 \cdot \sin \alpha} =$$

$$= \frac{-3 \cdot 2 + 6 \cdot 3}{2 \cdot \frac{1.5}{2.5}} = \underline{\underline{10 \text{ kN}}} \quad (\text{tah})$$



$$l = \sqrt{1.5^2 + 2^2} = 2.5 \text{ m}$$

$$\sin \alpha = \frac{1.5}{2.5}$$

$$\cos \alpha = \frac{2}{2.5}$$