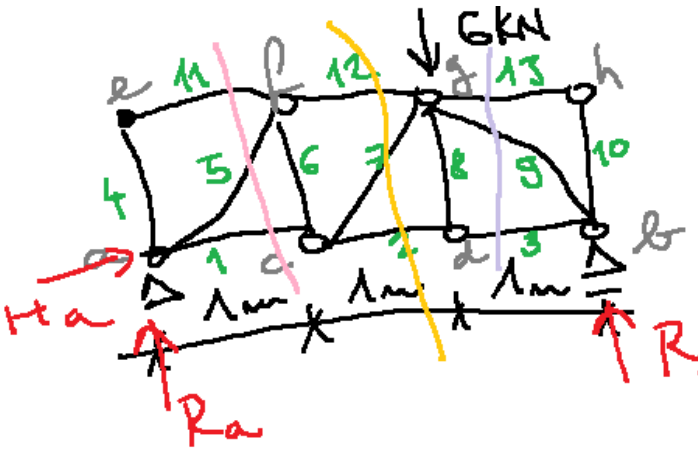
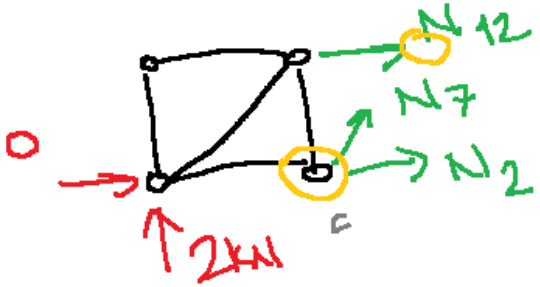


$\Sigma M_a = 0 \quad Ha \cdot 0 + Ra \cdot 0 - 6 \cdot 2 + R_b \cdot 3 = 0 \Rightarrow R_b = 4\,kN$

$\Sigma M_b = 0 \quad Ha \cdot 0 + Ra \cdot 3 + 6 \cdot 1 + R_b \cdot 0 = 0 \Rightarrow R_a = 2\,kN$

$\Sigma F_x = 0 \quad Ha = 0$

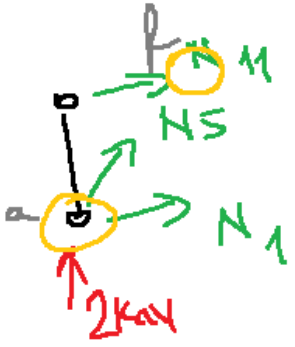
$\Sigma F_y = 0 \quad 4 - 6 + 2 = 0$ ✓



$\Sigma M_c = 0 \quad -2 \cdot 1 + 0 \cdot 0 + N_2 \cdot 0 + N_7 \cdot 0 - N_{12} \cdot 1 = 0 \Rightarrow N_{12} = -2\,kN$

$\Sigma M_g = 0 \quad -2 \cdot 2 + 0 \cdot 1 + N_{12} \cdot 0 + N_7 \cdot 0 + N_2 \cdot 1 = 0 \Rightarrow N_2 = 4\,kN$

$\Sigma F_y = 0 \quad 2 + N_7 \cdot \sin 45° = 0 \Rightarrow N_7 = \frac{-2}{\sin 45°} = -2{,}828\,kN$



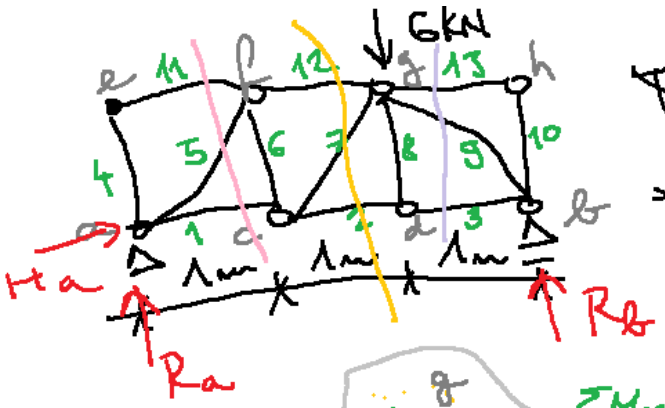
$N_{11} = 0 \qquad N_1 = 2 \qquad N_5 = -2{,}828\,kN$

$\Sigma M_a = 0 \quad -N_{11} \cdot 1 + N_5 \cdot 0 + N_1 \cdot 0 + 2 \cdot 0 = 0 \Rightarrow N_{11} = 0$

$\Sigma M_f = 0 \quad -2 \cdot 1 + N_1 \cdot 1 = 0 \Rightarrow N_1 = 2\,kN$

$\Sigma F_y = 0 \quad N_1 \cdot \sin 0 + N_5 \sin 45° + 2 \cdot \sin 90 + N_{11} \cdot \sin 0 = 0$

$N_5 = -2{,}828\,kN$

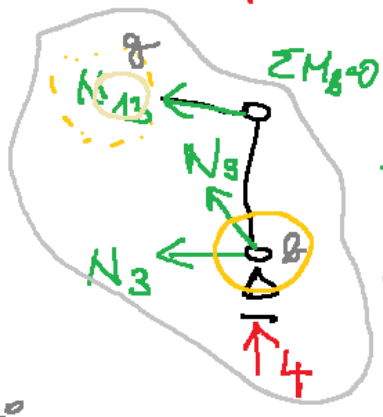


$\Sigma M_a = 0 \quad H_a \cdot 0 + R_a \cdot 0 - 6 \cdot 2 + R_b \cdot 3 = 0 \Rightarrow R_b = 4\,kN$

$\Sigma M_b = 0 \quad H_a \cdot 0 + R_a \cdot 3 + 6 \cdot 1 + R_b \cdot 0 = 0 \Rightarrow R_a = 2\,kN$

$\Sigma F_x = 0 \quad H_a = 0$

$\Sigma F_y = 0 \quad 4 - 6 + 2 = 0$ ✓

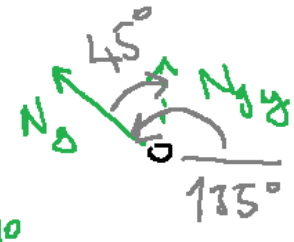


$\Sigma M_g = 0: N_g \cdot 0 + N_7 \cdot 0 + 4 \cdot 0 + N_{13} \cdot 1 = 0 \Rightarrow N_{13} = 0$

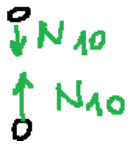
$\Sigma M_g = 0 \quad -N_3 \cdot 1 + 4 \cdot 1 + N_{13} \cdot 0 + N_g \cdot 0 = 0 \Rightarrow N_7 = 4\,kN$

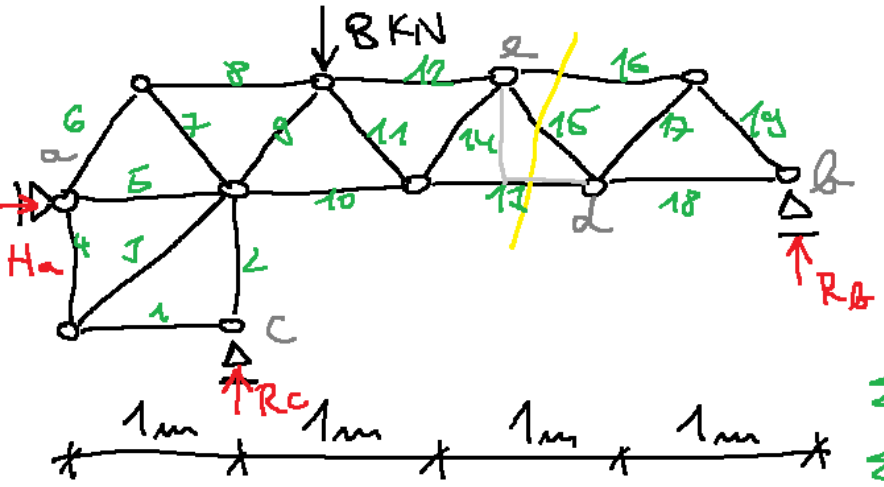
$\Sigma F_y = 0 \quad N_g \cdot \sin 135° + 4 \cdot \sin 90° = 0 \Rightarrow N_g = -5{,}7\,kN$

$\sin 45°$ $\quad 1$



$N_{8y} = N_8 \cdot \sin 45° = N_g \cdot \sin 135°$





$\Sigma M_a = 0 \quad H_a \cdot 0 + R_c \cdot 1 - 8 \cdot 1{,}5 + R_b \cdot 4 = 0 \Rightarrow R_b = +1{,}335$ kN

1 m $\Sigma M_b = 0 \quad -R_c \cdot 3 + 8 \cdot 2{,}5 + H_a \cdot 0 - 0 \Rightarrow R_c = 6{,}6$ kN

$\Sigma M_c = 0 \quad -H_a \cdot 1 + R_c \cdot 0 - 8 \cdot 0{,}5 + 1{,}335 \cdot 1 = 0 \Rightarrow H_a = 0$

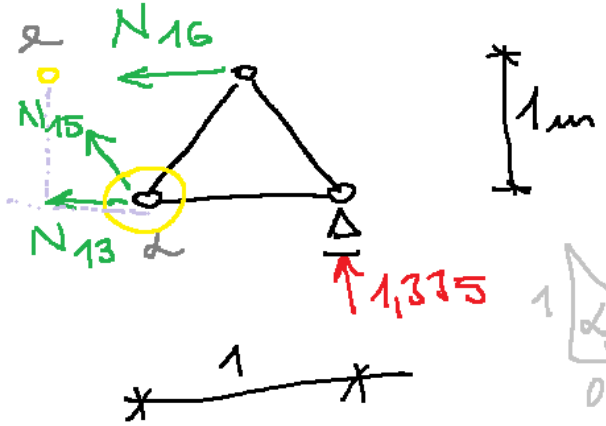
1 m $\Sigma F_x = 0 \quad H_a = 0$ ✓

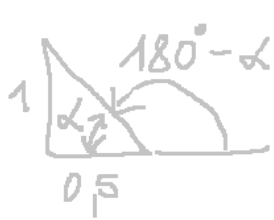
$\Sigma M_d = 0 \quad N_{16} \cdot 1 + 1{,}335 \cdot 1 = 0 \Rightarrow N_{16} = -1{,}335$ kN

[kN · m]

$\Sigma M_e = 0 \quad -N_{13} \cdot 1 + 1{,}335 \cdot 1{,}5 = 0 \Rightarrow N_{13} = 2$ kN

$\Sigma F_y = 0 \quad 1{,}335 + N_{15} \cdot \sin 116{,}565° = 0 \Rightarrow N_{15} = -1{,}49$ kN

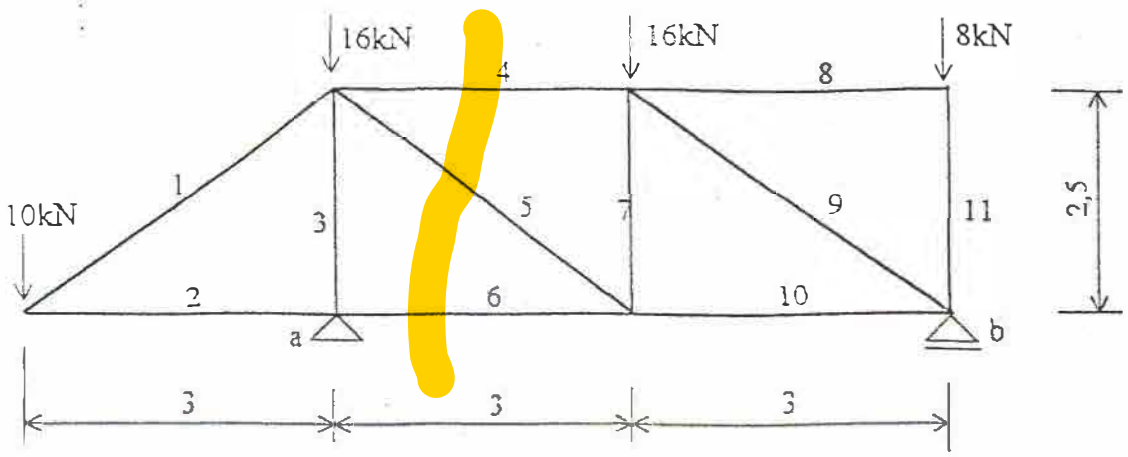




$\operatorname{tg}\alpha = \frac{1}{0{,}5} = 2 \Rightarrow \alpha = 63{,}435°$

4a

Vypočítejte reakce a osové síly v prutech 4, 5 a 6 průsečnou metodou.



Vyřešený příklad vložte do Teams