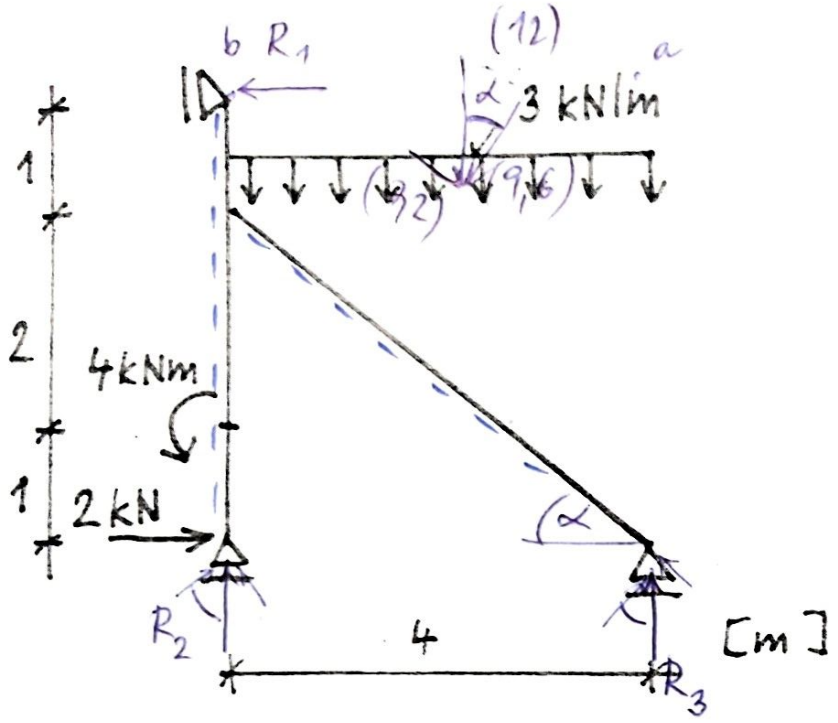


$\Sigma F_{ix} = 0: \quad 2 - R_1 = 0 \quad \rightarrow \underline{R_1 = 2}$

$\oplus \circlearrowleft \quad \Sigma M_{ia} = 0: \quad 3 \cdot 4 \cdot 2 + 4 + 2 \cdot 4 - R_2 \cdot 4 = 0$

$\underline{R_2 = 9\,kN}$

$\oplus \circlearrowright \quad \Sigma M_{ib} = 0: \quad -3 \cdot 4 \cdot 2 + 4 + 2 \cdot 4 + R_3 \cdot 4 = 0$

$\underline{R_3 = 3\,kN}$

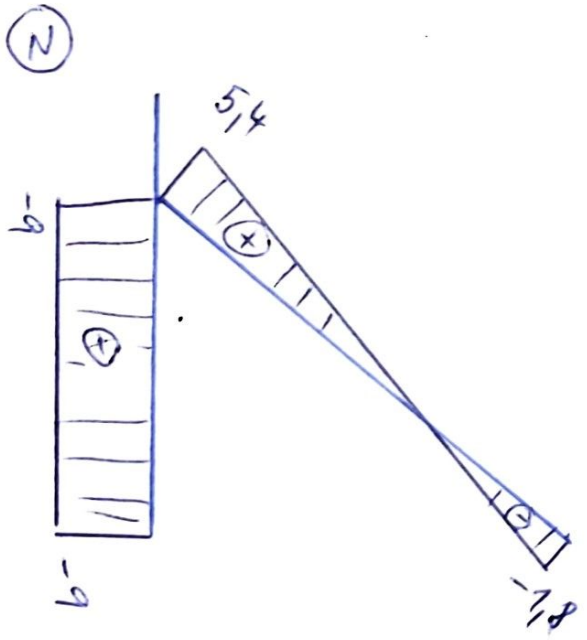
$K_0: \Sigma F_{iz} = 0: \quad 9 + 3 - 3 \cdot 4 = 0 \;\checkmark$

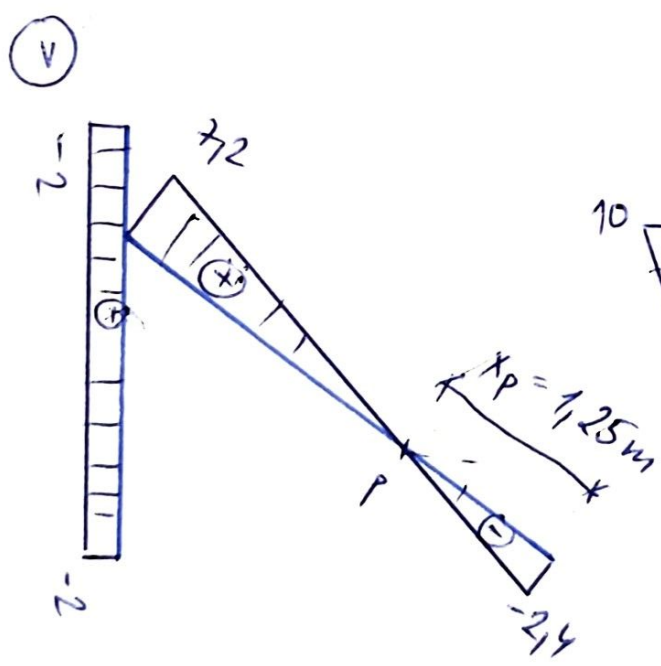
$\sin\alpha = \frac{3}{\sqrt{3^2+4^2}} = 0{,}6$

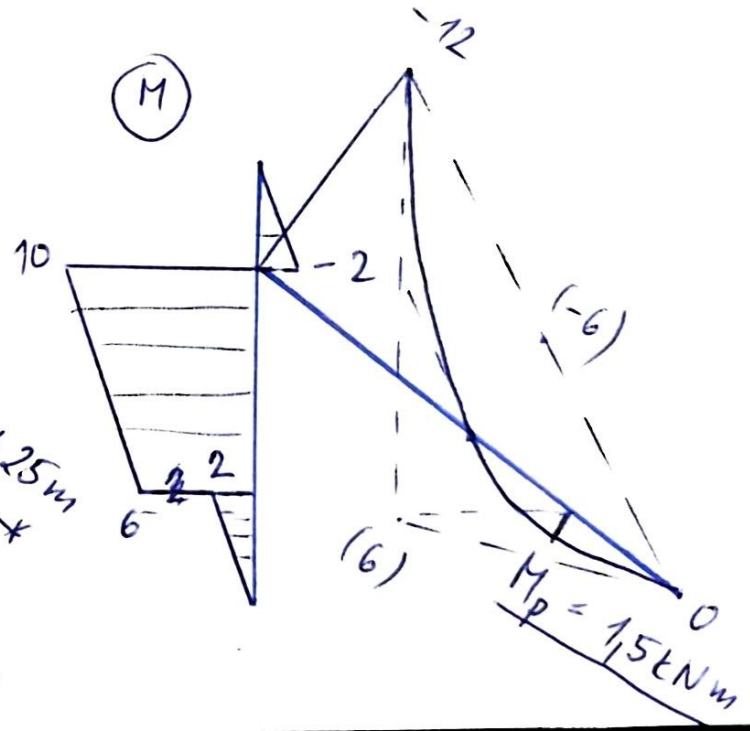
$\cos\alpha = \frac{4}{\sqrt{3^2+4^2}} = 0{,}8$

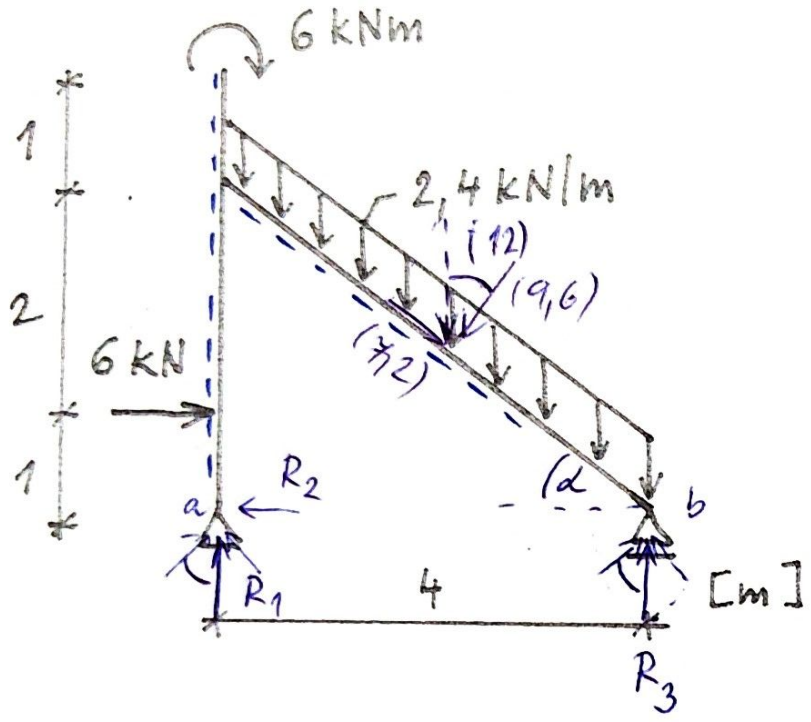
$q = 1{,}92\,kN/m$

$n = 1{,}44\,kN/m$









$\Sigma F_{ix} = 0: \quad 6 - R_2 = 0 \rightarrow \underline{R_2 = 6\ kN}$

$\oplus\circlearrowleft \Sigma M_{ia} = 0: \quad -6 \cdot 1 - 6 - 2{,}4 \cdot 5 \cdot 2 + R_3 \cdot 4 = 0$

$\underline{R_3 = 9kN}$

$\oplus\circlearrowleft \Sigma M_{ib} = 0: \quad 2{,}4 \cdot 5 \cdot 2 - 6 - 6 \cdot 1 - R_1 \cdot 4 = 0$

$\underline{R_1 = 3\ kN}$

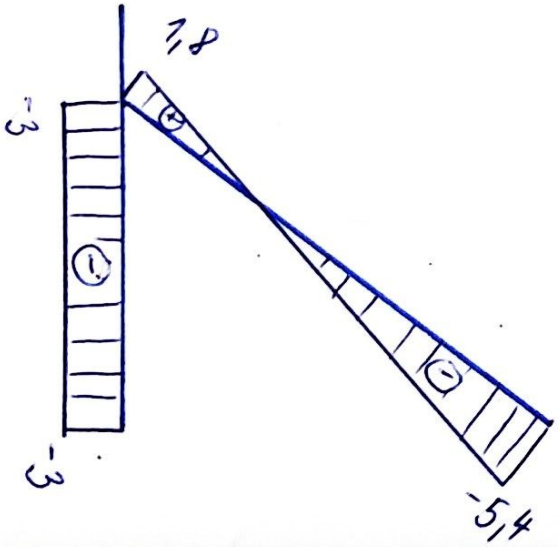
$KO: \Sigma F_{iz} = 0: \quad 3 + 9 - 2{,}4 \cdot 5 = 0$ ✓

$\sin\alpha = \frac{3}{\sqrt{3^2+4^2}} = 0{,}6$ $\qquad q = 1{,}92\ kN/m$

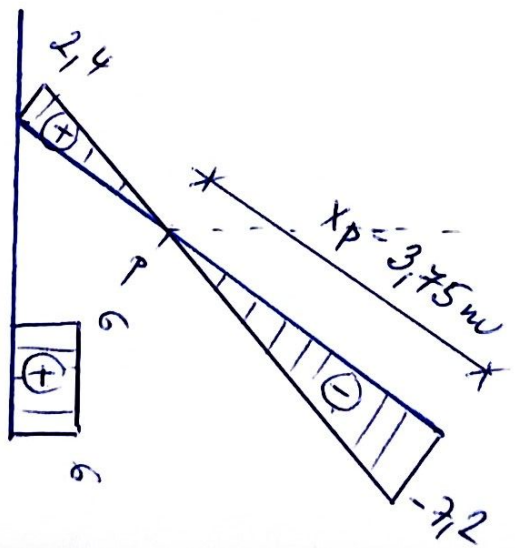
$\cos\alpha = \frac{4}{\sqrt{3^2+4^2}} = 0{,}8$ $\qquad n = 1{,}44\ kN/m$

$M_p^P = 0 - \int V\,dx = 0 - \frac{1}{2} \cdot (-7{,}2) \cdot 3{,}75 = \underline{13{,}5\ kNm}$

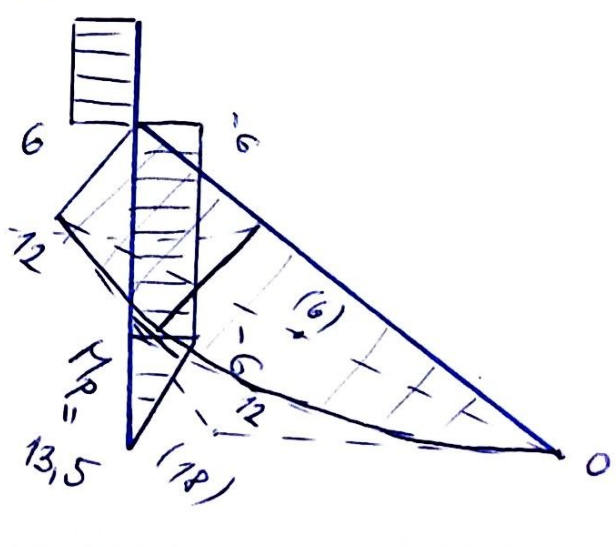
(N)

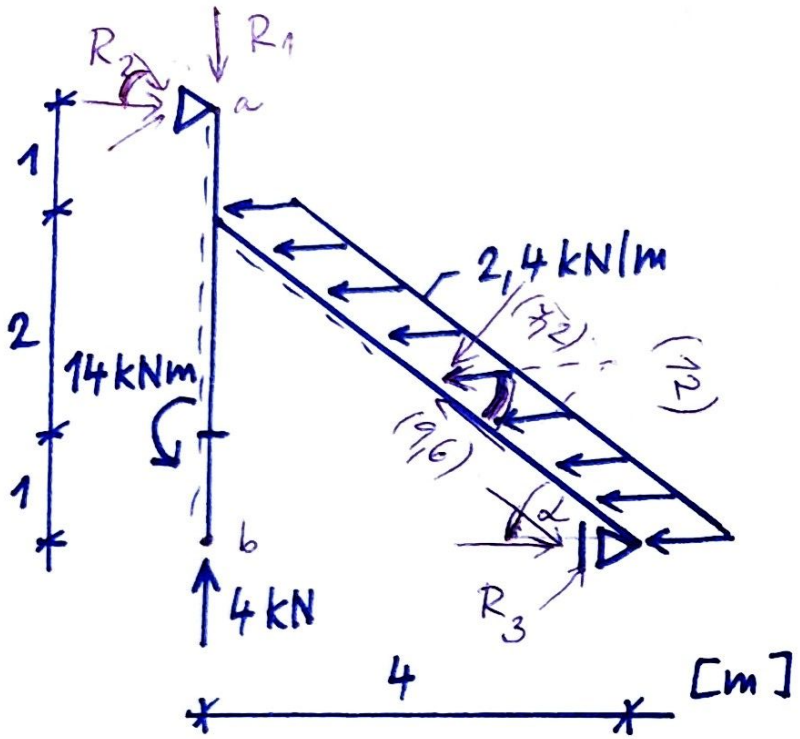


(V)



$(M)_6$





$\Sigma F_{iz} = 0: \quad -R_1 + 4 = 0 \rightarrow \underline{R_1 = 4\,kN}$

$\oplus \circlearrowleft \quad \Sigma M_{ia} = 0: \quad -2{,}4 \cdot 5 \cdot 2{,}5 + R_3 \cdot 4 + 14 = 0$

$\underline{R_3 = 4\,kN}$

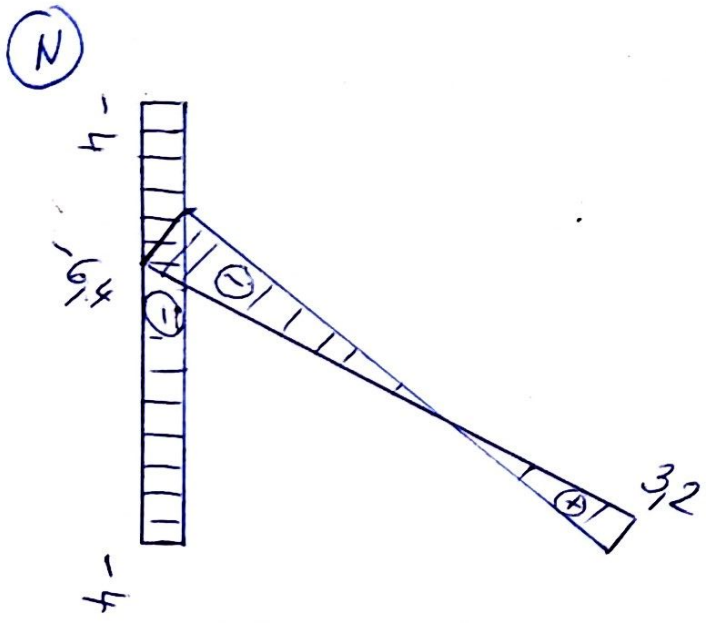
$\oplus \circlearrowright \quad \Sigma M_{ib} = 0: \quad 14 - R_2 \cdot 4 + 2{,}4 \cdot 5 \cdot 1{,}5 = 0$

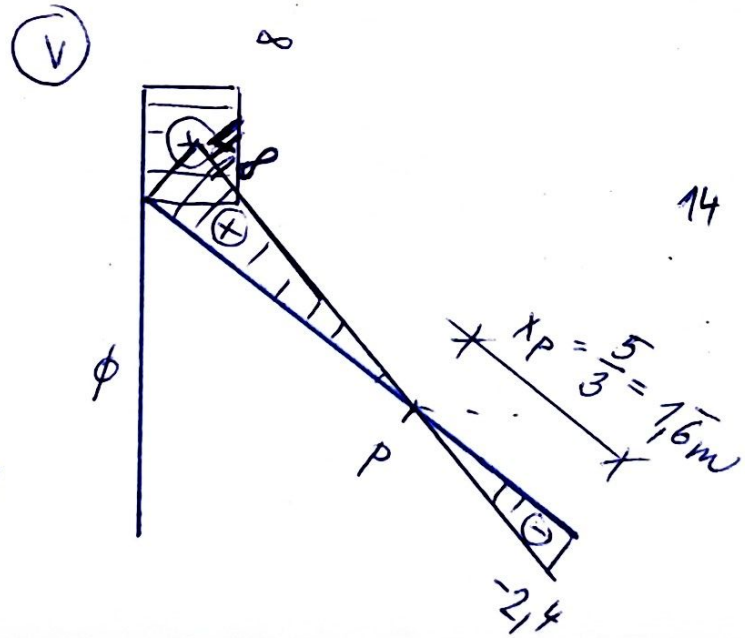
$\underline{R_2 = 8\,kN}$

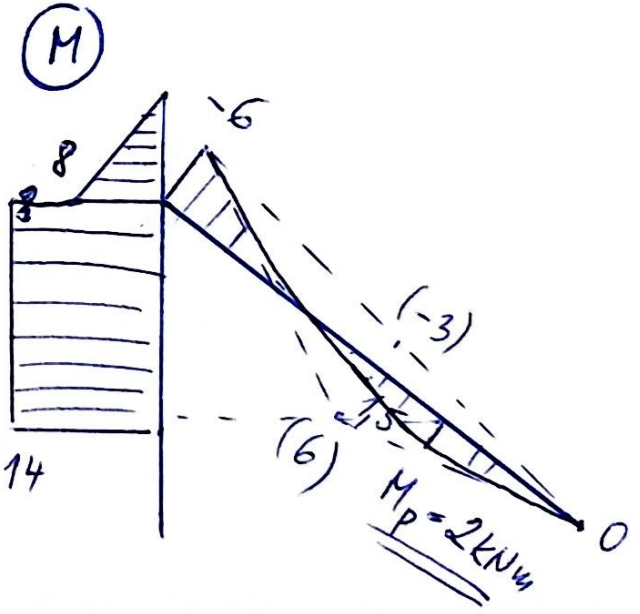
$ko: \Sigma F_{ix} = 0: \quad R_2 + R_3 - 2{,}4 \cdot 5 = 0 \quad \checkmark$

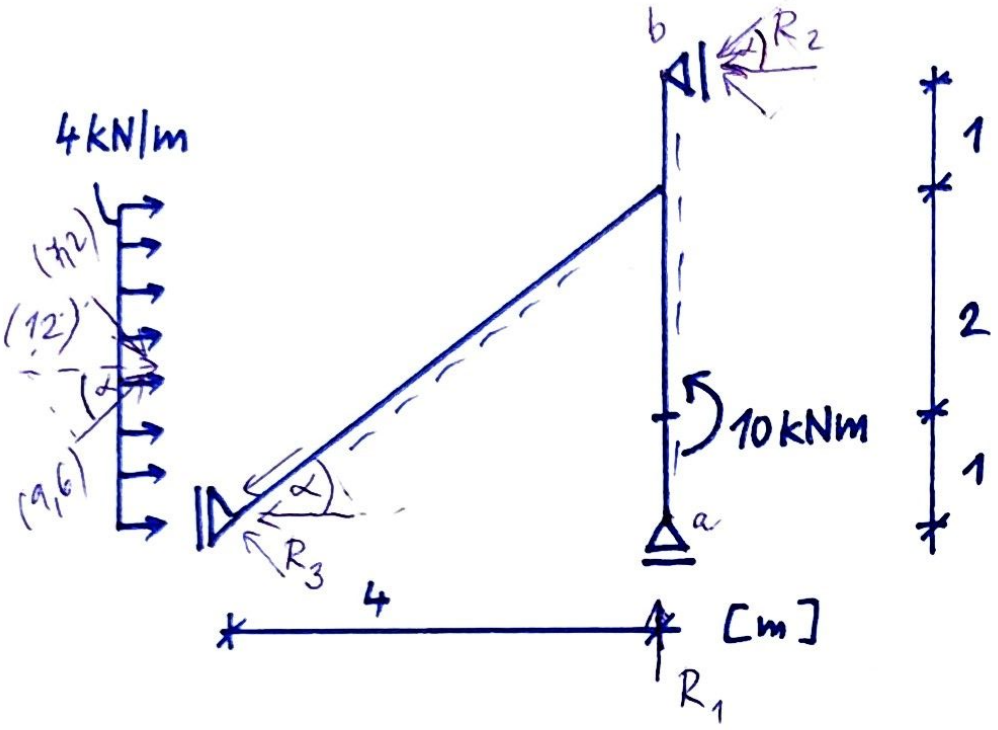
$\sin\alpha = \frac{3}{\sqrt{3^2+4^2}} = 0{,}6 \qquad q = 1{,}44\,kN/m$

$\cos\alpha = \frac{4}{\sqrt{3^2+4^2}} = 0{,}8 \qquad n = 1{,}92\,kN/m$









$\Sigma F_{ix} = 0 : \quad R_1 = \emptyset$

$\oplus \circlearrowleft \Sigma M_{ia} = 0 : \quad 10 + R_2 \cdot 4 - 4 \cdot 3 \cdot 1{,}5 = 0$

$R_2 = 2\,kN$

$\oplus \circlearrowleft \Sigma M_{ib} = 0 : \quad 4 \cdot 3 \cdot 2{,}5 - R_3 \cdot 4 + 10 = 0$

$R_3 = 10\,kN$

$K0 : \Sigma F_{iy} = 0 : \quad 4 \cdot 3 - R_3 - R_2 = 0$

$12 - 10 - 2 = 0 \quad \checkmark$

$\sin\alpha = \frac{3}{\sqrt{3^2+4^2}} = 0{,}6 \qquad q = 1{,}44\,kN/m$

$\cos\alpha = \frac{4}{\sqrt{3^2+4^2}} = 0{,}8 \qquad n = 1{,}92\,kN/m$

$M_p = 0 + \int V\,dx = 0 + \frac{1}{2} \cdot 6 \cdot \frac{25}{6} =$

$= 12{,}5\,kNm$