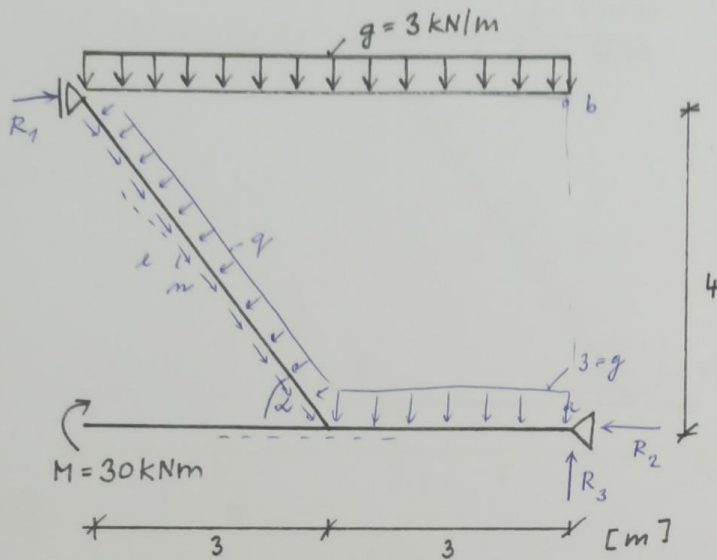
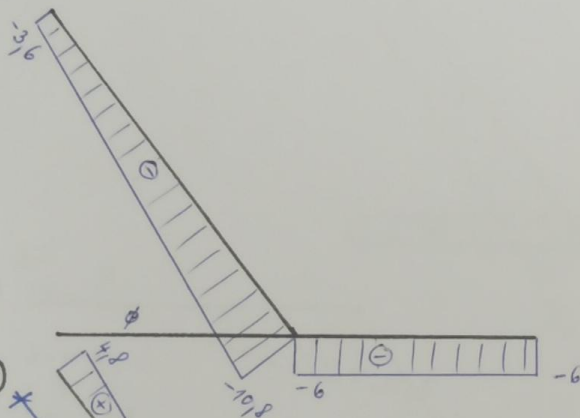
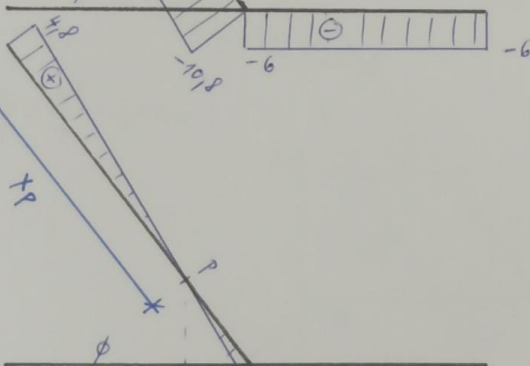




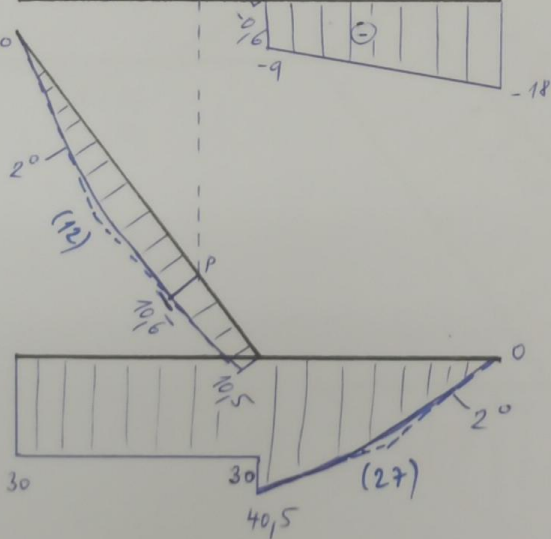
②



③



④



$$\textcircled{1} \sum M_{ia} = 0:$$

$$-M - R_1 \cdot 4 + g \cdot 6 \cdot 3 = 0$$

$$R_1 = \frac{-30 + 3 \cdot 6 \cdot 3}{4} = \underline{\underline{6 \text{ kN}}} (\rightarrow)$$

$$\textcircled{1} \sum F_{i2} = 0:$$

$$g \cdot 6 - R_3 = 0$$

$$R_3 = 3 \cdot 6 = \underline{\underline{18 \text{ kN}}} (\uparrow)$$

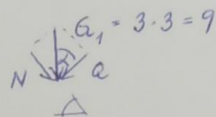
$$\textcircled{1} \sum M_{ib} = 0:$$

$$g \cdot 6 \cdot 3 - M - R_2 \cdot 4 = 0$$

$$R_2 = \frac{3 \cdot 6 \cdot 3 - 30}{4} = \underline{\underline{6 \text{ kN}}} (\leftarrow)$$

$$k0: \sum F_{ix} = 0: R_1 - R_2 = 0$$

$$6 - 6 = 0 \checkmark$$



$$l = \sqrt{3^2 + 4^2} = 5 \text{ m}$$

$$\sin \alpha = \frac{4}{5} = 0,8$$

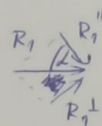
$$\cos \alpha = \frac{3}{5} = 0,6$$

$$Q = G_1 \cdot \cos \alpha = 5,4 \text{ kN}$$

$$\rightarrow q = \frac{5,4}{5} = \underline{\underline{1,08 \text{ kN/m}}}$$

$$N = G_1 \cdot \sin \alpha = 7,2 \text{ kN}$$

$$\rightarrow n = \frac{7,2}{5} = \underline{\underline{1,44 \text{ kN/m}}}$$



$$R_1^{\parallel} = R_1 \cdot \cos \alpha = 3,6 \text{ kN}$$

$$R_1^{\perp} = R_1 \cdot \sin \alpha = 4,8 \text{ kN}$$



$$R_2^{\parallel} = R_2 \cdot \cos \alpha = 3,6 \text{ kN}$$

$$R_2^{\perp} = R_2 \cdot \sin \alpha = 4,8 \text{ kN}$$

$$\uparrow R_3 + \downarrow g \cdot 3 = \uparrow q$$

$$\perp = q \cdot \cos \alpha = 5,4 \text{ kN}$$

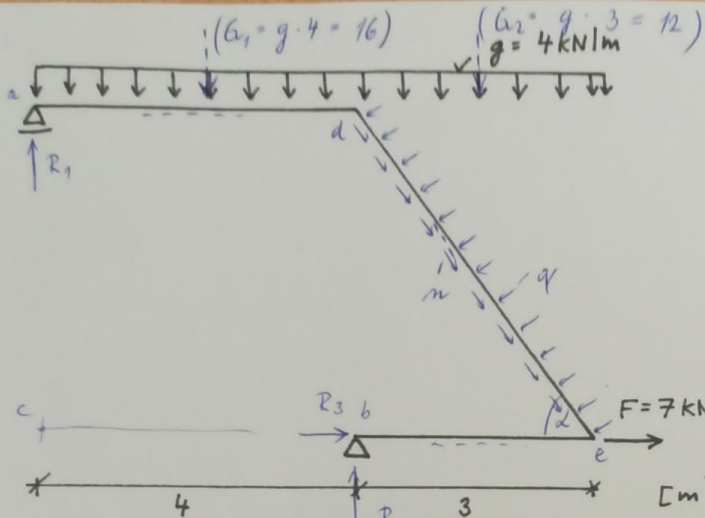
$$\parallel = q \cdot \sin \alpha = 7,2 \text{ kN}$$

$$x_p: V_p^{\perp} = 0: R_1^{\perp} - q \cdot x_p = 0$$

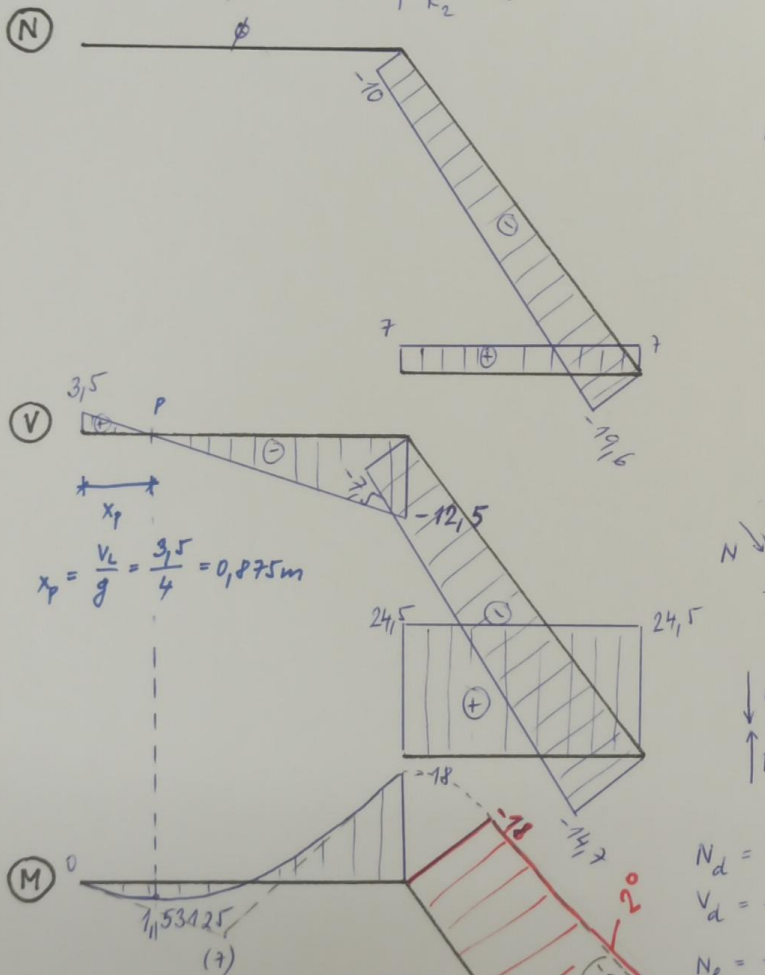
$$x_p = \frac{R_1^{\perp}}{q} = \frac{4,8}{1,08} = \underline{\underline{4,44 \text{ m}}}$$

$$M_p = R_1^{\perp} \cdot x_p - q \cdot x_p \cdot \frac{x_p}{2}$$

$$= 4,8 \cdot 4,44 - 1,08 \cdot \frac{4,44^2}{2} = \underline{\underline{10,6 \text{ kNm}}}$$



$l = \sqrt{4^2 + 3^2} = 5 \text{ m}$
 $\sin \alpha = \frac{4}{5} = 0,8$
 $\cos \alpha = \frac{3}{5} = 0,6$



$\oplus \sum M_{1b} = 0 :$

$-R_1 \cdot 4 + g \cdot 7 \cdot 0,5 = 0$

$R_1 = \frac{4 \cdot 7 \cdot 0,5}{4} = 3,5 \text{ kN}$

$\oplus \sum M_{1c} = 0 :$

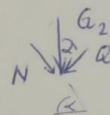
$-g \cdot 7 \cdot 3,5 + R_2 \cdot 4 = 0$

$R_2 = \frac{4 \cdot 7 \cdot 3,5}{4} = 24,5 \text{ kN}$

$\sum F_{ix} = 0 : R_3 + F = 0$

$R_3 = -F = -7 \text{ kN}$

$\text{KO} : \sum F_{iz} = 0 : R_1 + R_2 - g \cdot 7 = 0$
 $3,5 + 24,5 - 4 \cdot 7 = 0 \quad \checkmark$

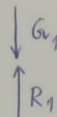


$Q = G_2 \cdot \cos \alpha = 12 \cdot 0,6 = 7,2 \text{ kN}$

$\rightarrow q = \frac{7,2}{5} = 1,44 \text{ kN/m}$

$N = G_2 \cdot \sin \alpha = 12 \cdot 0,8 = 9,6 \text{ kN}$

$\rightarrow n = \frac{9,6}{5} = 1,92 \text{ kN/m}$



$I = 12,5 \cdot \cos \alpha = 7,5 \text{ kN}$

$II = 12,5 \cdot \sin \alpha = 10 \text{ kN}$

$N_d = -10 = -10 \text{ kN}$

$V_d = -1 = -7,5 \text{ kN}$

$N_e = -10 - n \cdot 5 = -10 - 1,92 \cdot 5 = -19,6 \text{ kN}$

$V_e = -7,5 - q \cdot 5 = -7,5 - 1,44 \cdot 5 = -14,7 \text{ kN}$

$R_2^{\parallel} = R_2 \cdot \sin \alpha = 24,5 \cdot 0,8 = 19,6 \text{ kN}$

$R_2^{\perp} = R_2 \cdot \cos \alpha = 24,5 \cdot 0,6 = 14,7 \text{ kN}$

$\rightarrow F = -7 + 7 = 0$

$M_p = M_{\max} = R_1 \cdot x_p - g \cdot x_p \cdot \frac{x_p}{2} = 3,5 \cdot 0,875 - 4 \cdot \frac{0,875^2}{2} = 1,53125 \text{ kNm}$