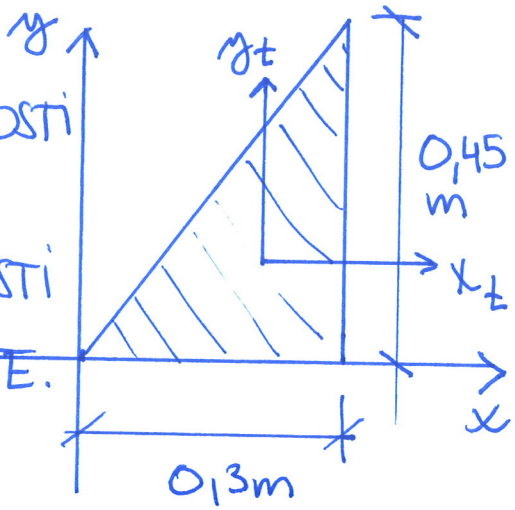
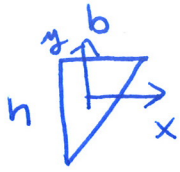
ZADÁNÍ ZKOUŠKY BD001 Č 1/2020 JE

① VYPOČTĚTE HLAVNÍ CENTRÁLNÍ MOMENTY SETRVAČNOSTI OBRAZCE. URČETE OSU, KE KTERÉ JE MOMENT SETRVAČNOSTI MAXIMÁLNÍ. ŘEŠENÍ NAKRESLETE.



POMŮCKA:

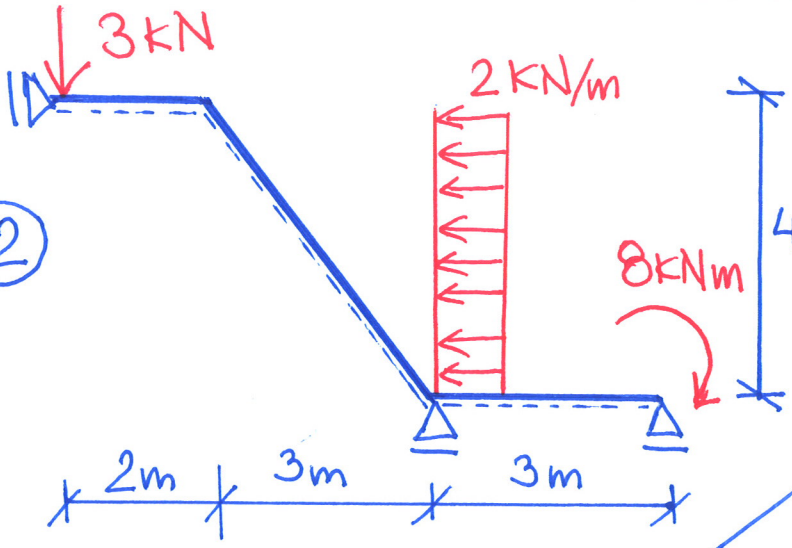


$$I_x = \frac{bh^3}{36}$$

$$D_{xy} = \frac{b^2h^2}{72}$$

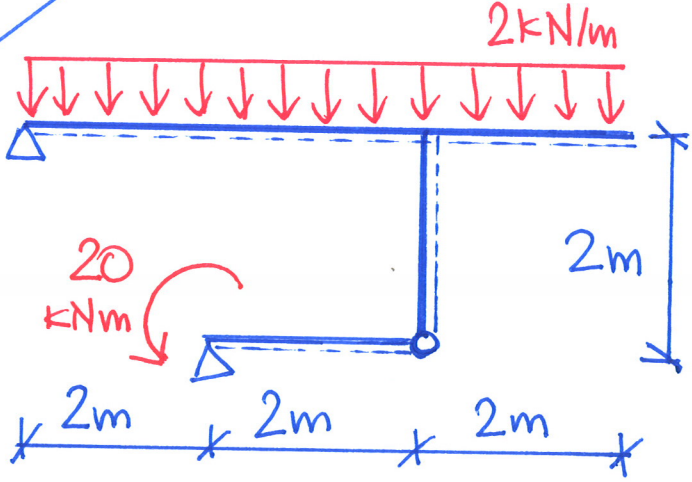
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② VYPOČTĚTE A VYKRESLETE REAKCE A VNITŘNÍ SÍLY VČETNĚ EXTRÉMNÍCH HODNOT MOMENTŮ.



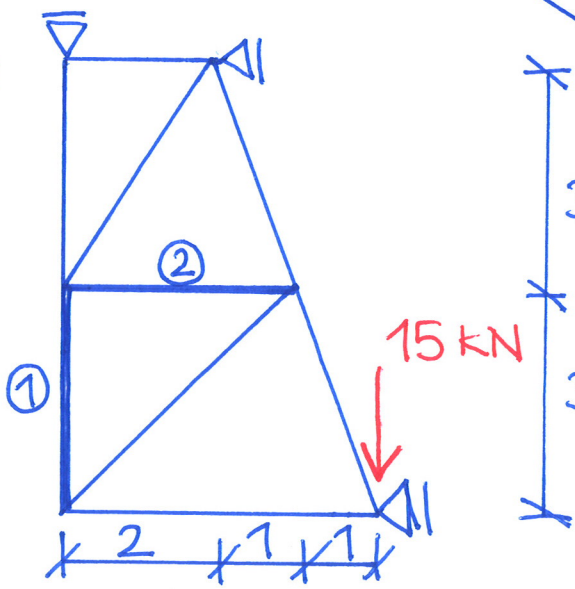
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③ VYPOČTĚTE A VYKRESLETE REAKCE... ... HODNOT MOMENTŮ.



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④ URČETE NORMÁLOVOU SÍLU V PRUTECH ① A ② PŘÍHRADOVÉ KONSTRUKCE NA OBRÁZKU. SLOVNĚ NAPIŠTE, ZDA-LI SE JEDNÁ O TAH ČI TLAK.



RESENI C. 1/2020 JE

1

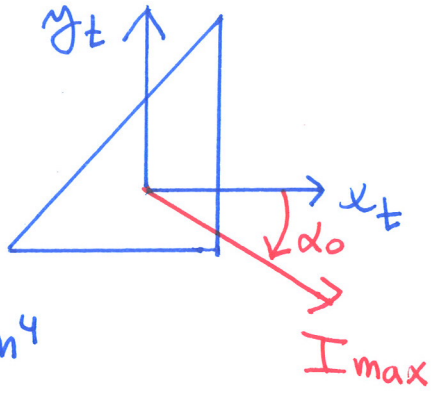
$$I_{x_t} = \frac{0{,}3 \cdot 0{,}45^3}{36} = 7{,}594 \cdot 10^{-4}\ m^4$$

$$I_{y_t} = \frac{0{,}45 \cdot 0{,}3^3}{36} = 3{,}375 \cdot 10^{-4}\ m^4$$

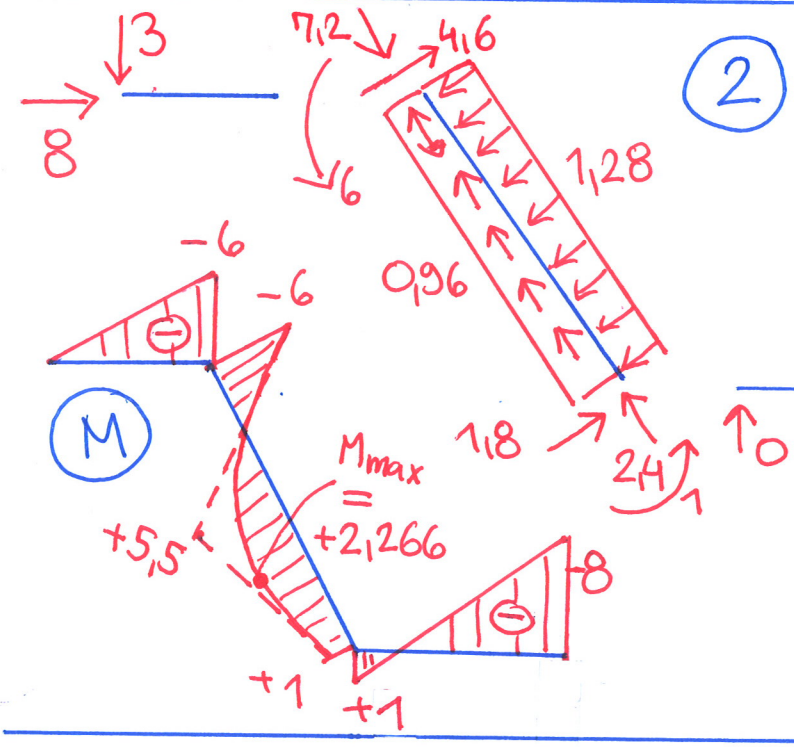
$$D_{x_t y_t} = \frac{0{,}45^2 \cdot 0{,}3^2}{72} = 2{,}531 \cdot 10^{-4}\ m^4$$

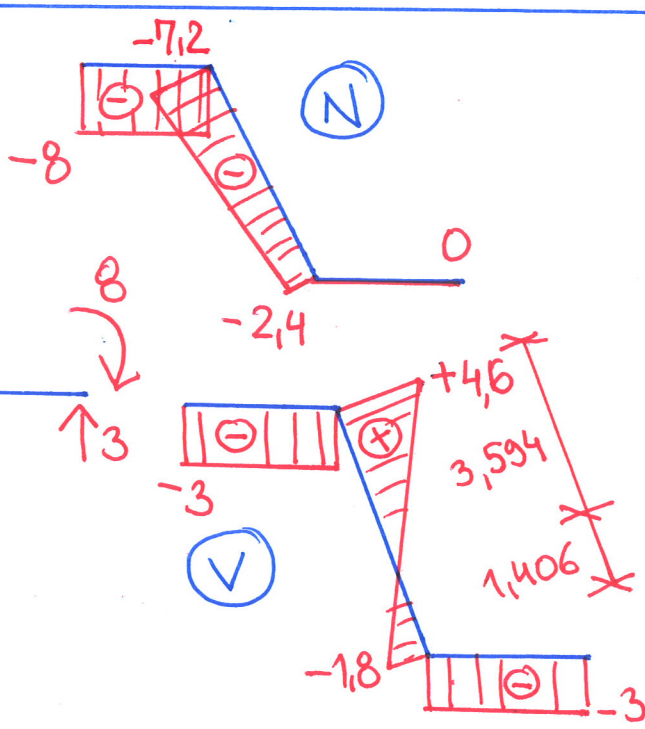
$$I_{12} = 5{,}485 \pm 3{,}295 = \begin{cases} 8{,}78 \cdot 10^{-4} \\ 2{,}19 \cdot 10^{-4} \end{cases} m^4$$

$$\alpha_0 = \operatorname{atan}\left(\frac{D_{x_t y_t}}{I_{y_t} - I_1}\right) = -25{,}092°$$

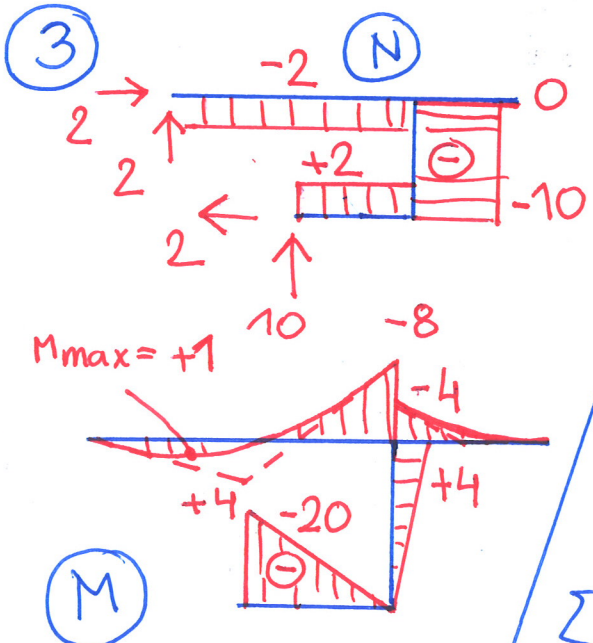


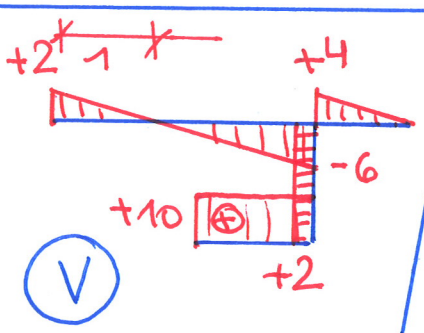
2





3





$$\sum M^a = 0$$

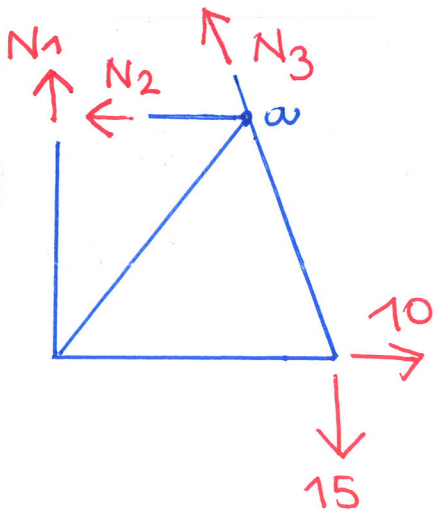
$$3 \cdot 10 - 15 \cdot 1 - N_1 \cdot 3 = 0$$

$$N_1 = 5\ kN\ (TAH)$$

$$\sum M^b = 0$$

$$12 \cdot 10 - 15 \cdot 4 - N_2 \cdot 9 = 0$$

$$N_2 = 20/3\ kN\ (TAH)$$



4