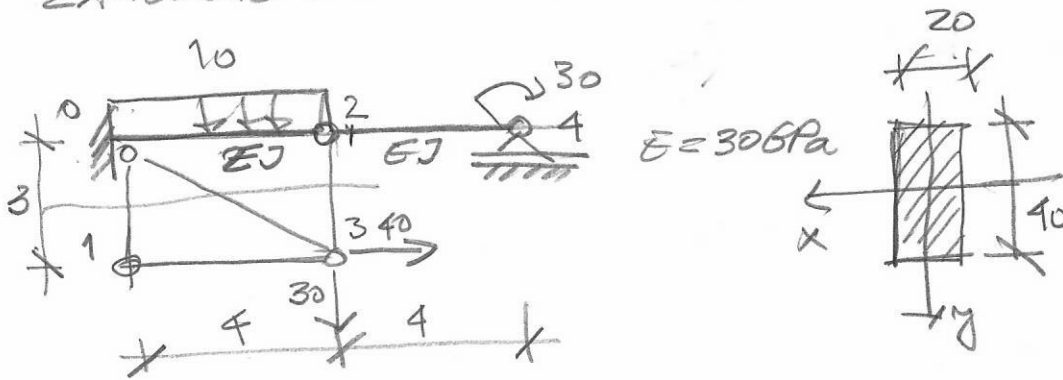


UNIVERZITET U BANJALUCI
 ARHITEKTONSKO-GRADJEVINSKO-GEODEZSKI FAKULTET
 KATEDRA ZA MEHANIKU I TEORIJU KONSTRUKCIJA
 STUDIJSKI PROGRAM ARHITEKTURA

23.10.2020.

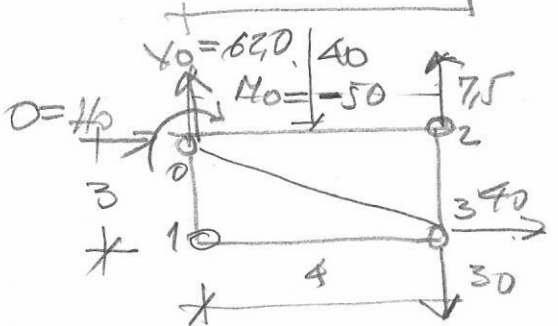
MEHANIKA I ODPORNOST MATERIJALA

ZANODIAČ NA SKICI IZADATA O PZREČEČE TREBA:

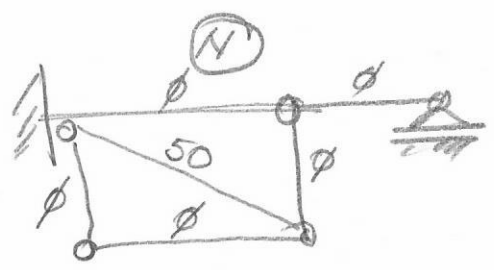
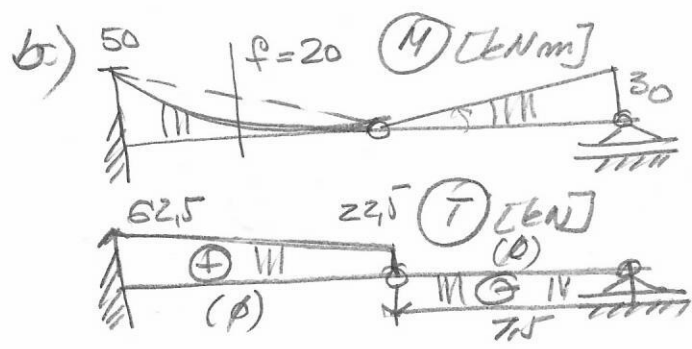


- SRAČUNATI I NACRTATI REAKCIJE I SILE VEĆA IZMEĐU ČLONOVA
- NACRTATI DIAGRAME PRESEČNIH SILA
- SRAČUNATI SILE U ČLANOVIMA REŠETKE PO DVE METODE PO IZBORU
- SRAČUNATI I NACRTATI DIAGRAME KOMP. NAPONA U PRESEKU 2 DESNO
- MOR-MARKSULOVOM ANALOGIJOM ODREDITI V_2 , $A\varphi_2$ I φ_4 PA SKICIRATI DEF. OSU NOSIČA.

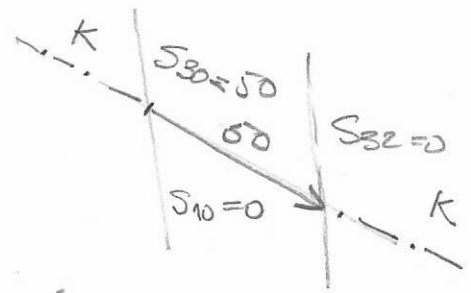
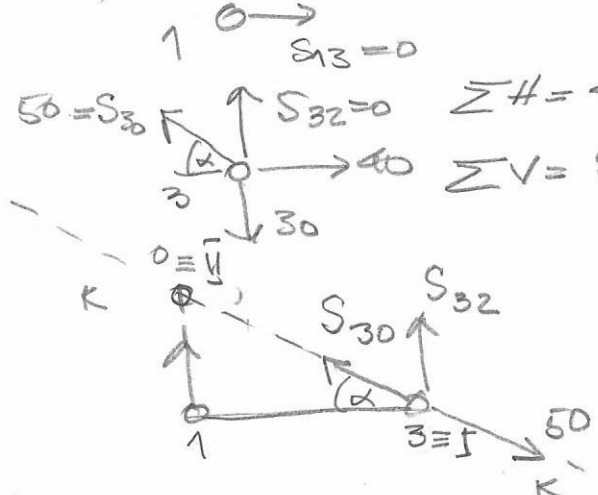
a) $\sum M_2 = 4V_4 - 30 = 0 \Rightarrow V_4 = 7,5$
 $\sum V = V_2 + 7,5 = 0 \Rightarrow V_2 = -7,5$
 $\sum H = H_2 = 0$



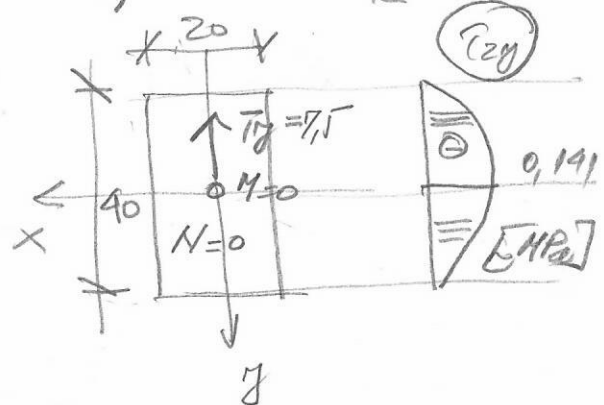
$\sum V = V_0 - 40 - 30 + 7,5 = 0 \Rightarrow V_0 = 62,5 \text{ kN}$
 $\sum H = H_0 = 0 \Rightarrow H_0 = 0 \text{ kN}$
 $\sum M_0 = M_0 + 40(2-3) + 4(30-7,5) = 0 \Rightarrow M_0 = -50 \text{ kNm}$



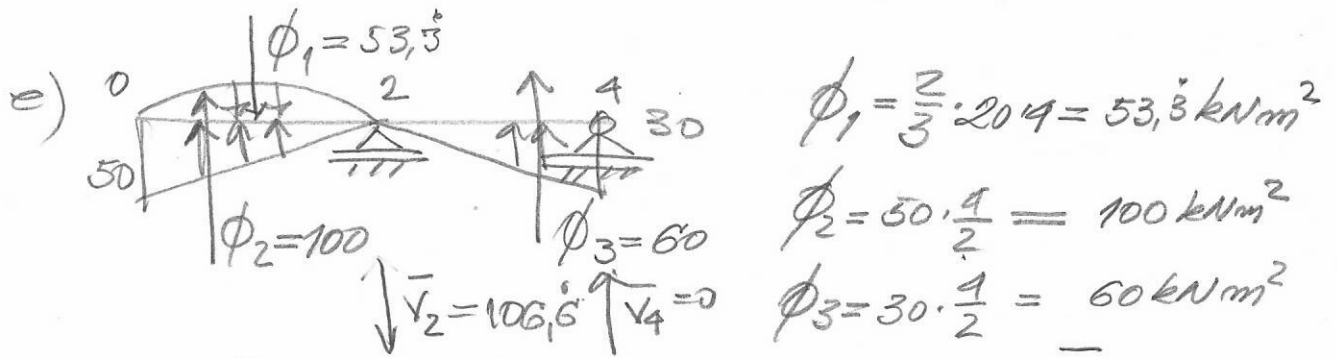
c) $\sum V = S_{10} = 0 \Rightarrow S_{10} = 0$
 $\sum H = S_{13} = 0 \Rightarrow S_{13} = 0$
 $\sum H = 40 - S_{30} \cdot 0,8 = 0 \Rightarrow S_{30} = 50 \text{ kN}$
 $\sum V = S_{32} + 50 \cdot 0,6 - 30 = 0 \Rightarrow S_{32} = 0 \text{ kN}$



d) $J = 20 \cdot \frac{40^3}{12} = 106666,6$
 $\bar{F} = 20 \cdot 40 = 800 \text{ cm}^2$



$\sigma_z(M_x) = 0$
 $\sigma_z(N) = 0$
 $\tau_{xy} = \frac{3}{2} \frac{7,5 \cdot 10^{-3}}{800 \cdot 10^{-4}} = 0,141 \text{ MPa}$



$$\sum M_2 = \bar{V}_4 \cdot 4 + \frac{q}{3} \cdot (60 - 100) + 2 \cdot 53,3 = 0 \Rightarrow \underline{\underline{\bar{V}_4 = 0}}$$

$$EJ = 30 \cdot 10^3 \cdot 106666,6 \cdot 10^{-8} = \underline{\underline{32 \text{ MNm}^2}}$$

$$v_2 = \frac{\bar{M}_2}{EJ} = \frac{0}{32} \cdot 60 \cdot 10^{-3} = \underline{\underline{5 \cdot 10^{-3} \text{ m}}}$$

$$\Delta \varphi_2 = \frac{\bar{V}_2}{EJ} = \frac{-106,6 \cdot 10^{-3}}{32} = \underline{\underline{-3,3 \cdot 10^{-3} \text{ rad}}}$$

$$\varphi_4 = \frac{\bar{T}_4}{E} = \frac{0}{EJ} = \underline{\underline{0 \text{ rad}}}$$

