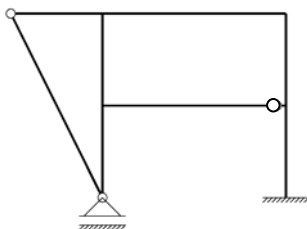


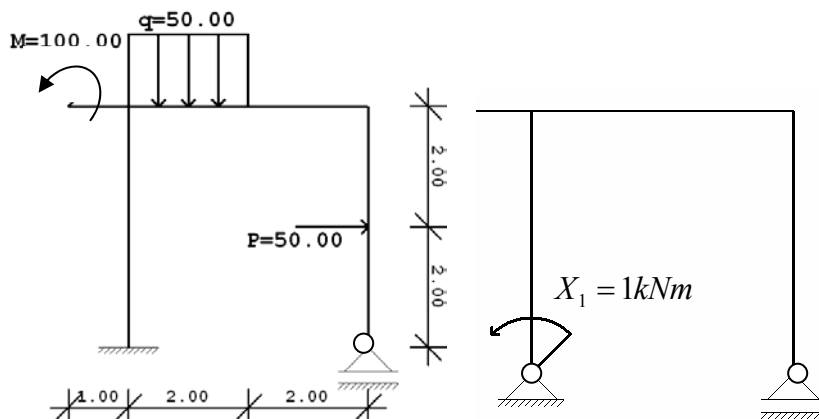
(ime i prezime, broj indeksa)

1. Odrediti stupanj statičke neodređenosti zadanog sustava te presijecanjem unutarnjih i vanjskih veza nacrtati dva statički određena sustava. (10 bodova)



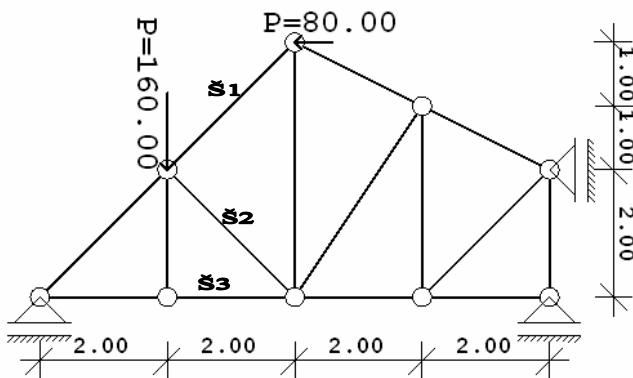
2. Za sustav na slici **METODOM SILA** odrediti dijagrame unutarnjih sila (M, T i N). Pri izračunu koeficijenta fleksibilnosti uzeti u obzir utjecaj **momenata savijanja** na deformiranje sustava. Dimenzije elemenata sustava su $b/h = 20/30$ cm, $E = 3.15 \cdot 10^7$ kN/m² ($M_{v,}, m_{1,}$)*8, (a_{1v}, a_{1v})*6, $X_1 = 4$, (M_k, T_k i N_k)*6 (50 bodova).

Za izračunavanje koristiti **zadani osnovni sustav**.

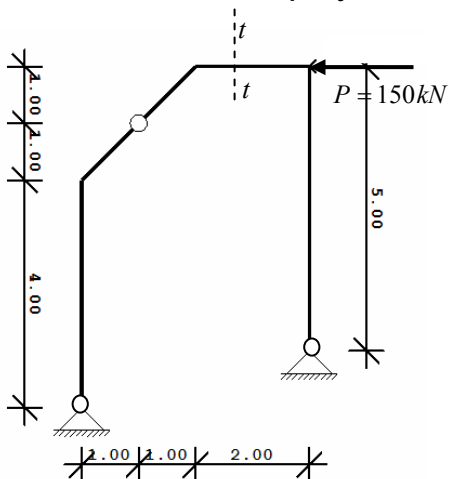


osnovni sustav za rješavanje

3. Odredite vrijednosti sila u označenim štapovima. (20 bodova)



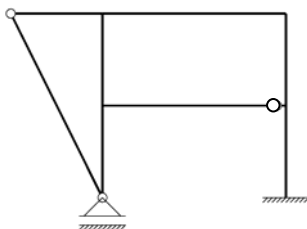
4. Grafički odredite sile u presjeku t-t M_{tt} , T_{tt} i N_{tt} (20 bodova)



Napomena: Na usmeni dio ispita može se pristupiti s 50 i više bodova iz pismenog dijela, ali pod uvjetom da iz 2.zadatka treba sakupiti najmanje 25 bodova.

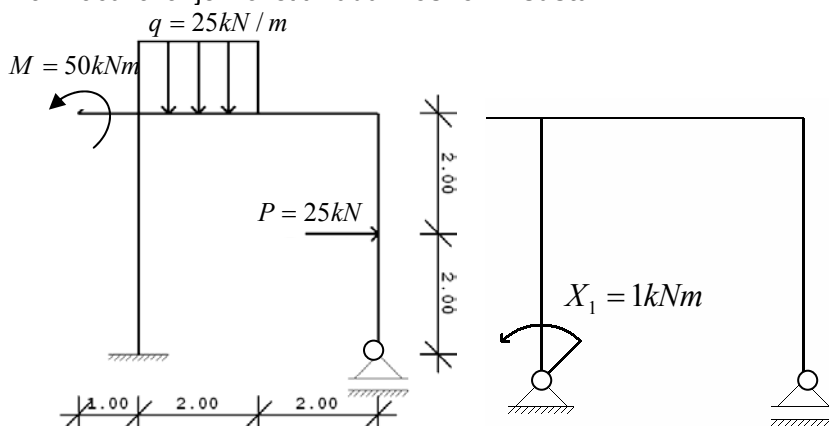
(ime i prezime, broj indeksa)

1. Odrediti stupanj statičke neodređenosti zadanog sustava te presijecanjem unutarnjih i vanjskih veza nacrtati dva statički određena sustava. (10 bodova)



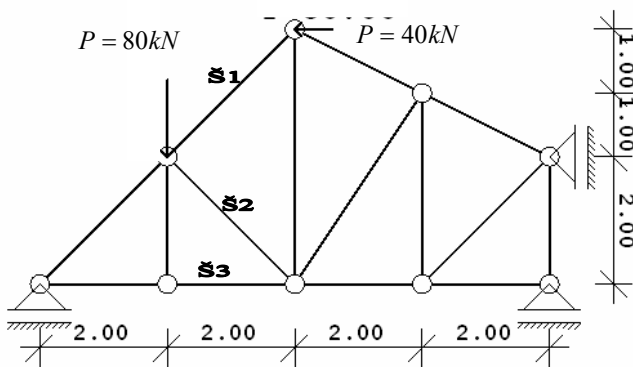
2. Za sustav na slici **METODOM SILA** odrediti dijagrame unutarnjih sila (M, T i N). Pri izračunu koeficijenta fleksibilnosti uzeti u obzir utjecaj **momenata savijanja** na deformiranje sustava. Dimenzije elemenata sustava su $b/h = 20/30$ cm, $E = 3.15 \cdot 10^7$ kN/m² ($M_{v,}, m_{1,}$)*8, ($a_{1,}, a_{1v}$)*6, $X_1 = 4$, (M_k, T_k i N_k)*6 (50 bodova).

Za izračunavanje koristiti **zadani osnovni sustav**.

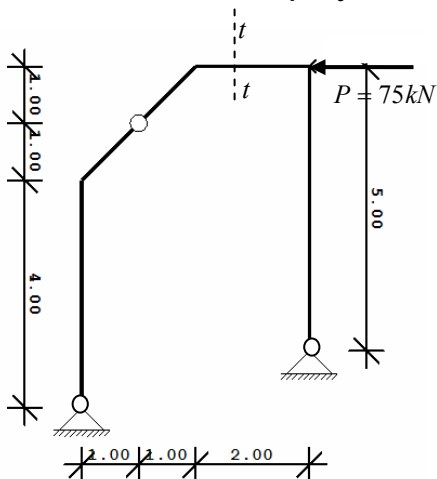


osnovni sustav za rješavanje

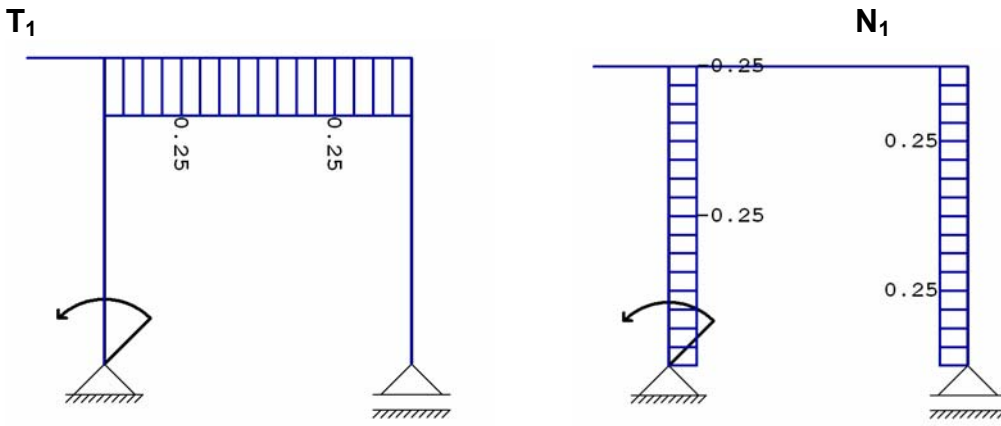
3. Odredite vrijednosti sila u označenim štapovima (20 bodova)



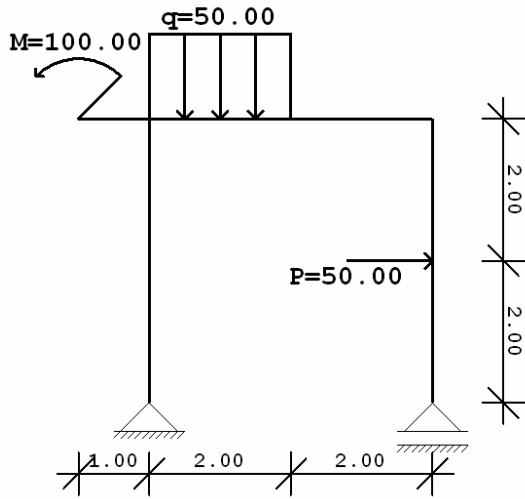
4. Grafički odredite sile u presjeku t-t M_{tt} , T_{tt} i N_{tt} (20 bodova)



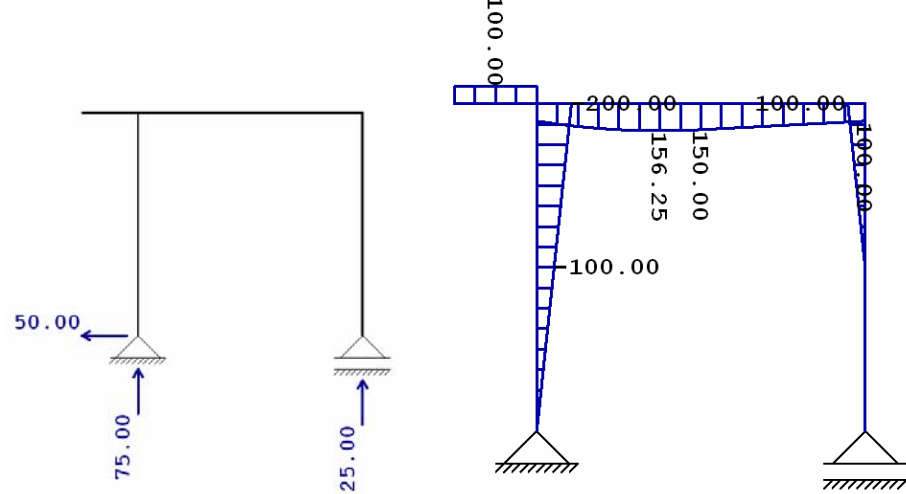
Napomena: Na usmeni dio ispita može se pristupiti s 50 i više bodova iz pismenog dijela, ali pod uvjetom da iz 2.zadatka treba sakupiti najmanje 25 bodova.



OSNOVNI SUSTAV – VANJSKO OPTEREĆENJE



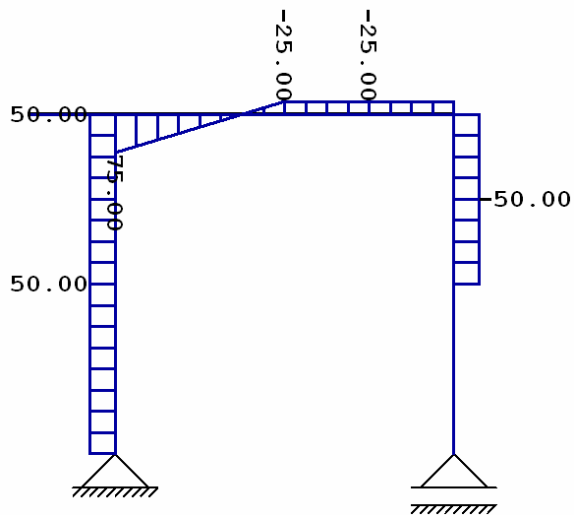
REAKCIJE



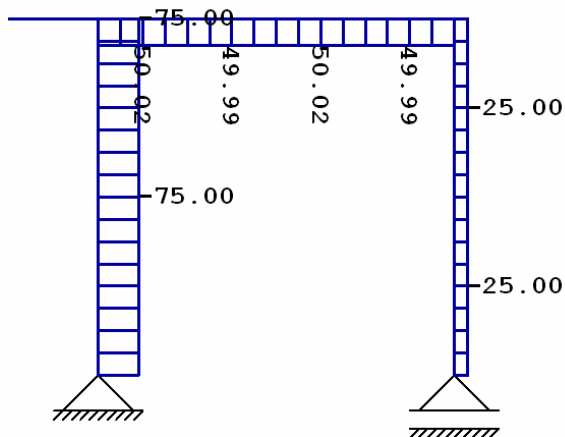
$a_{1v} = -675/EI$

$X_1 = 126,64 \text{ kNm}$

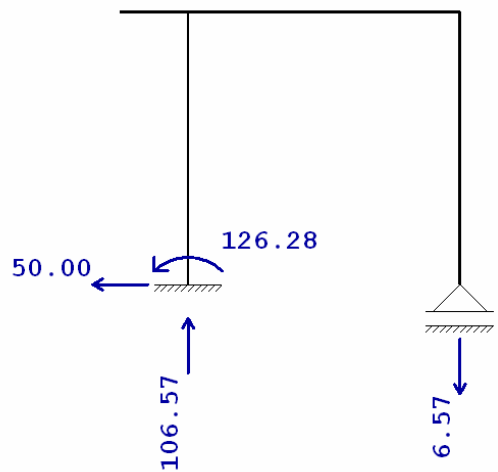
Tv



Nv

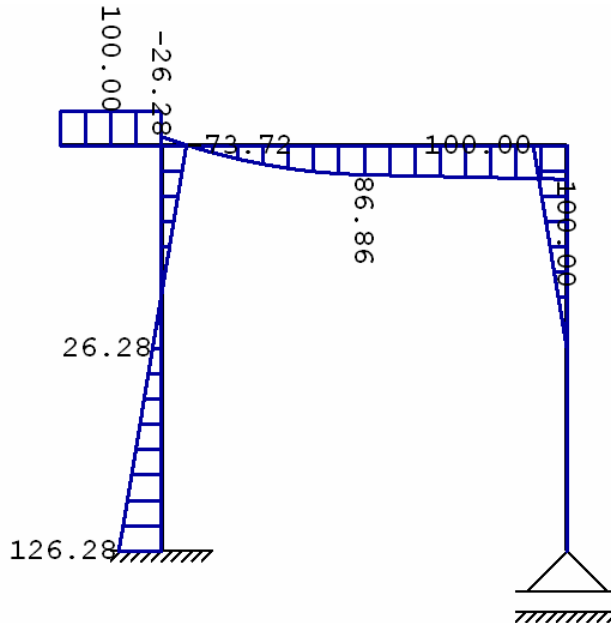


REAKCIJE UKUPNE

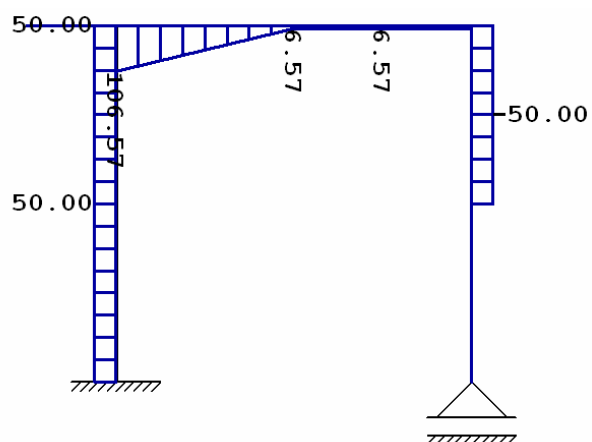


KONAČNI DIJAGRAMI

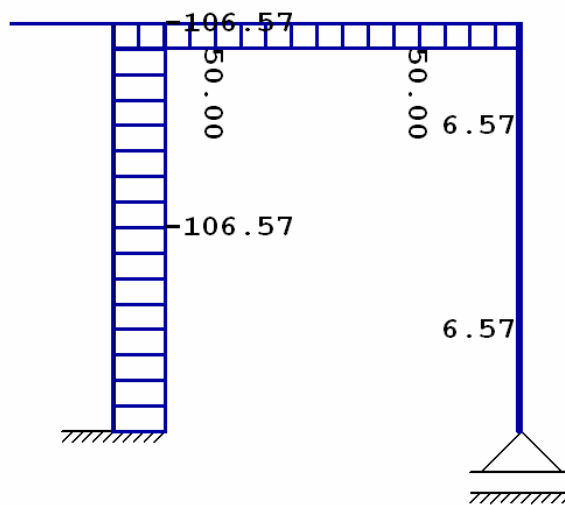
Mk



Tk

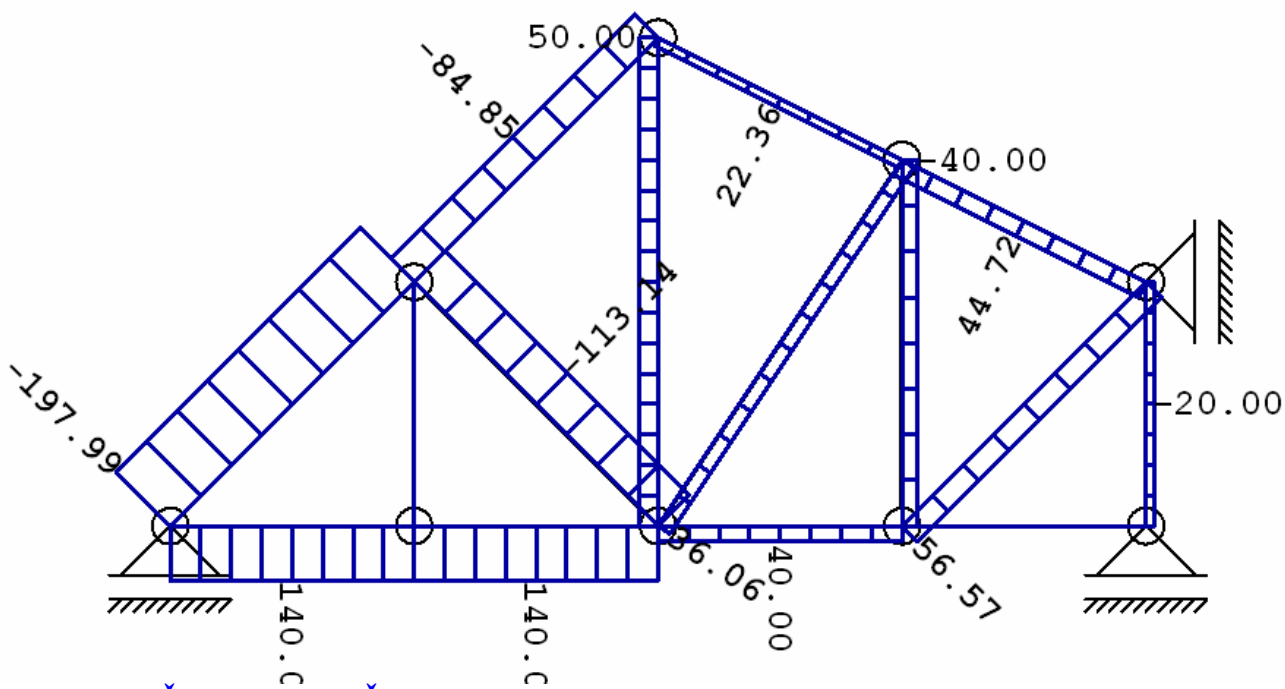
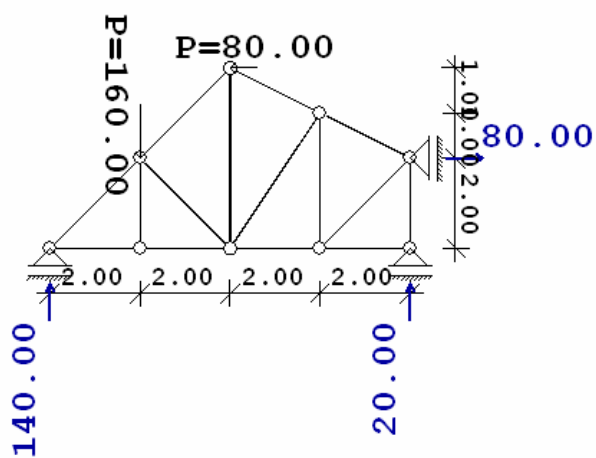
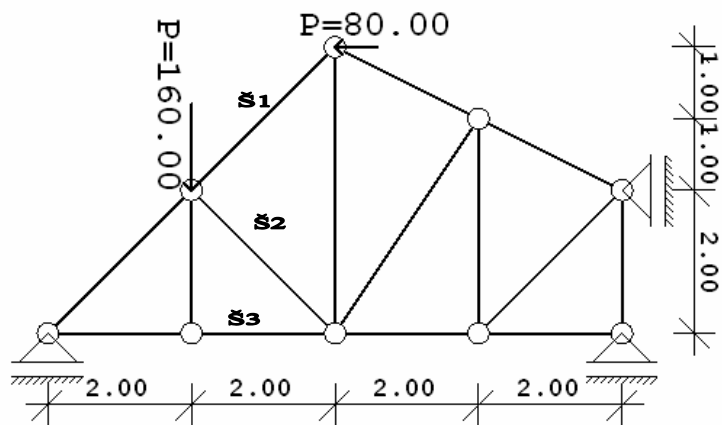


Nk



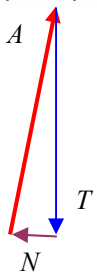
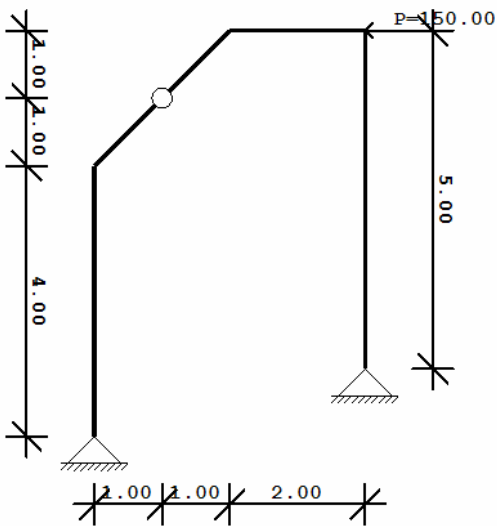
Napomena: dijagram poprečnih sila treba zrcaliti oko uzdužne osi svakog elementa tako da odgovara konvenciji koju smo naučili u Tehničkoj mehanici

3. Odredite vrijednosti sila u označenim štapovima

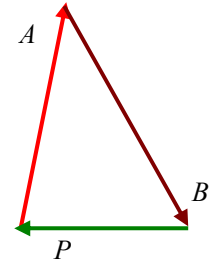
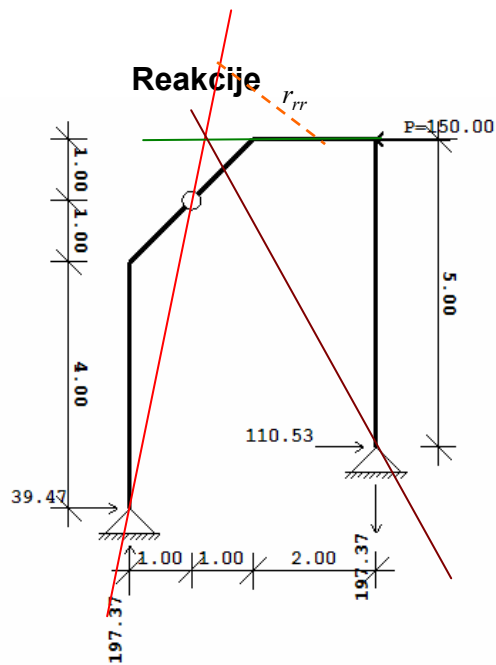


$\check{S}_1 = -84.85 \text{ kN}$; $\check{S}_2 = -113.14 \text{ kN}$; $\check{S}_3 = 140 \text{ kN}$

4. Trozglobni



$M = 355 \text{ kNm}$; $T = 197 \text{ kN}$; $N = -39 \text{ kN}$



$A = 202 \text{ kN}$; $B = 226 \text{ kN}$