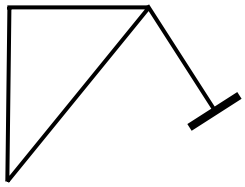
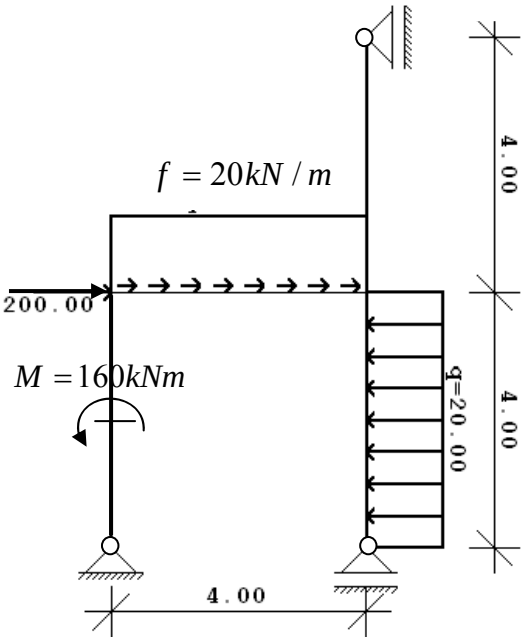
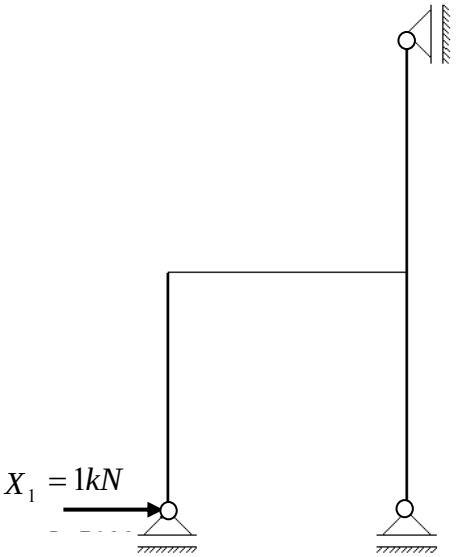
PRORAČUN KONSTRUKCIJA, 9. travnja 2008. godine **grupa zadataka *A***

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



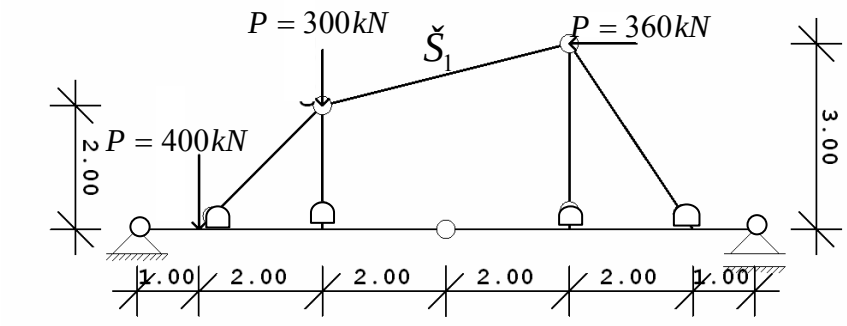
2. Za sustav na slici **METODOM SILA** odrediti dijagrame unutarnjih sila (M_K, T_K i N_K). Pri izračunu koeficijenata fleksibilnosti uzeti u obzir utjecaj **SAMO momenata savijanja** na deformiranje sustava.
EI je konstantan za cijeli sustav.*(50 bodova). (m_1=**10**;M_v=**10**; M_K, T_K, N_K=3*5=**15**; a_{11}=**6**;a_{1v}=**6**;X_1=**3**)*
Za izračunavanje koristiti **zadani osnovni sustav**.



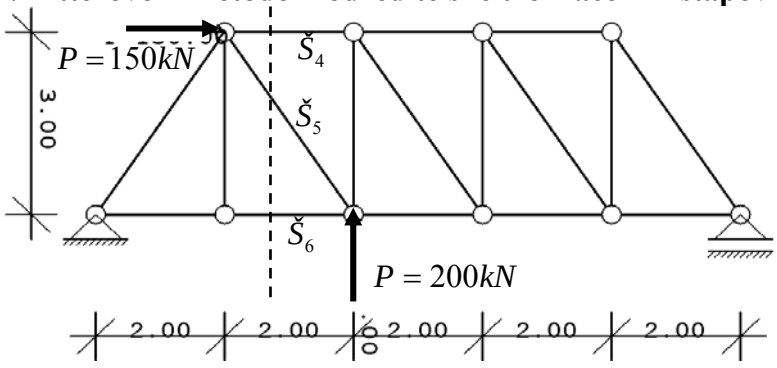


osnovni sustav za rješavanje

3: Odredite vrijednost sile u zadanom štapu! (20 bodova)

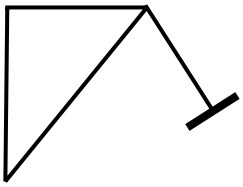


4. Ritterovom metodom odredite sile u označenim štapovima! (20 bodova)



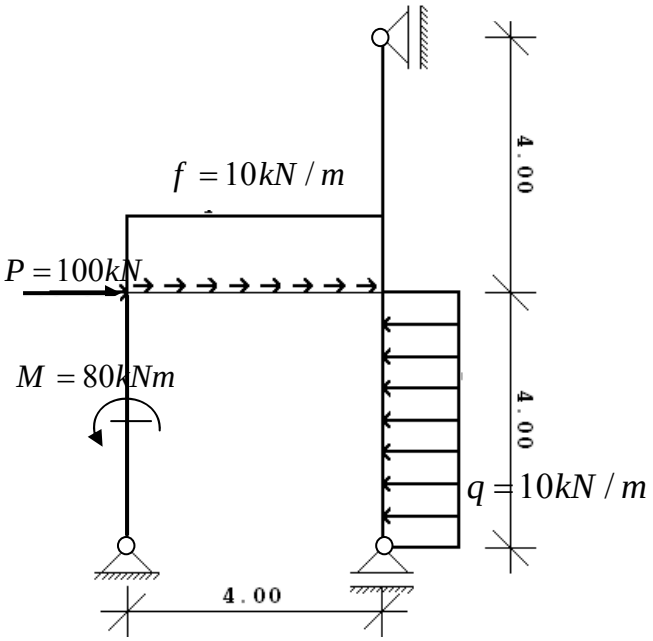
NAPOMENA: ZA PROLAZ NA USMENI DIO ISPITA TREBA SAKUPITI 60 I VIŠE BODOVA ALI ZADATAK IZ METODE SILA MORA BITI BODOVAN S NAJMANJE 25 BODOVA!!!!

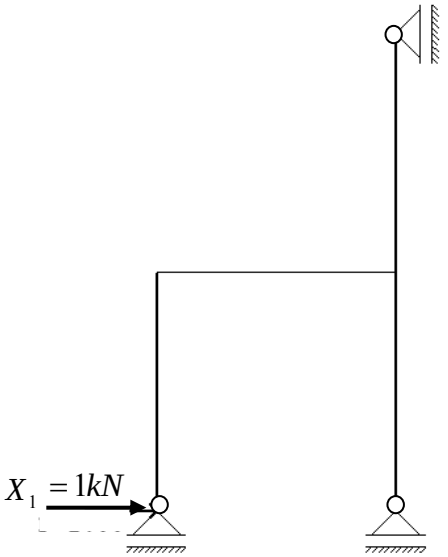
1. Odrediti stupanj statičke neodređenosti zadanog sustava te presijecanjem unutarnjih i vanjskih veza nacrtati dva statički određena sustava. (*10 bodova*)



2. Za sustav na slici **METODOM SILA** odrediti dijagrame unutarnjih sila (M_K, T_K i N_K). Pri izračunu koeficijenata fleksibilnosti uzeti u obzir utjecaj **SAMO momenata savijanja** na deformiranje sustava.
EI je konstantan za cijeli sustav.*(50 bodova). (m_1=**10**;M_v=**10**; M_K, T_K, N_K=3*5=**15**; a_{11}=**6**;a_{1v}=**6**;X_1=**3**)*

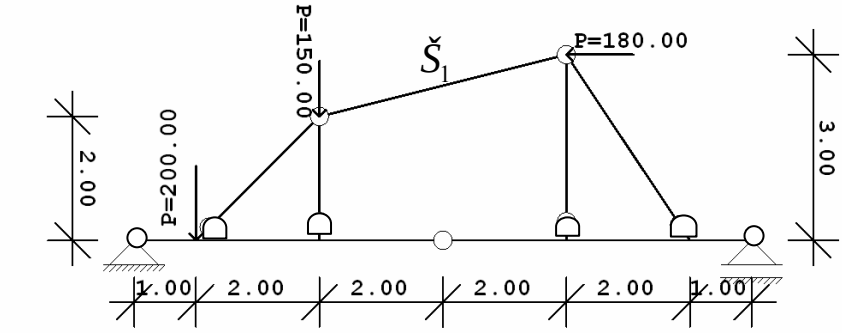
Za izračunavanje koristiti **zadani osnovni sustav**.



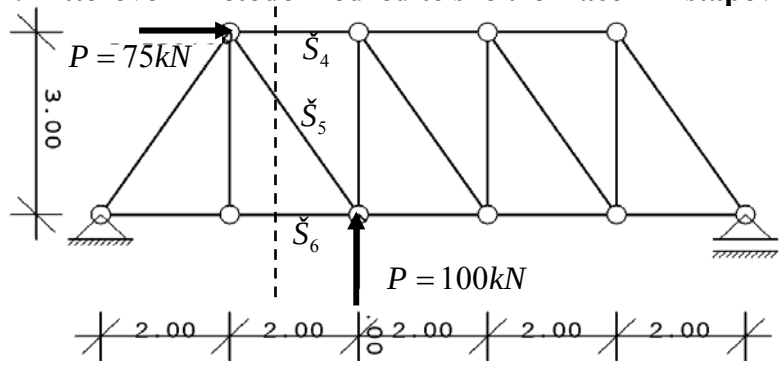


osnovni sustav za rješavanje

3: Odredite vrijednost sile u zadanom štapu! (20 bodova)

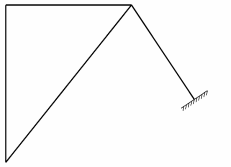


4. Ritterovom metodom odredite sile u označenim štapovima! (20 bodova)



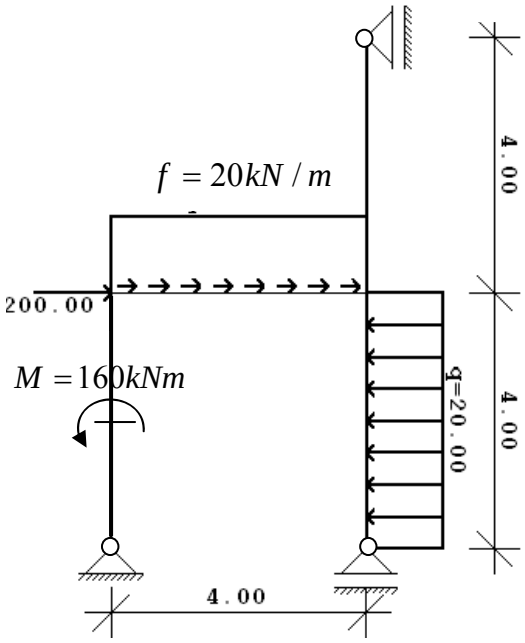
NAPOMENA: ZA PROLAZ NA USMENI DIO ISPITA TREBA SAKUPITI 60 I VIŠE BODOVA ALI ZADATAK IZ METODE SILA MORA BITI BODOVAN S NAJMANJE 25 BODOVA!!!!

1. zadatak - neodređenost



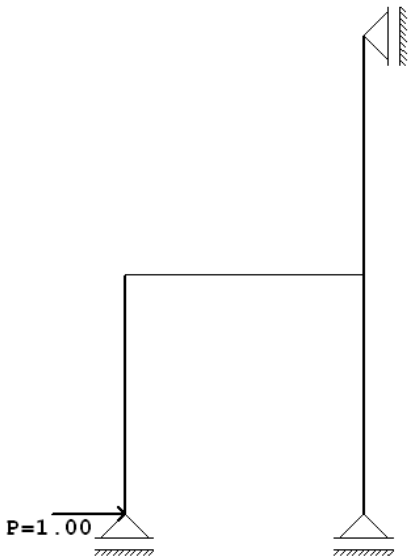
3 puta neodređen

2. Zadatak METODA SILA

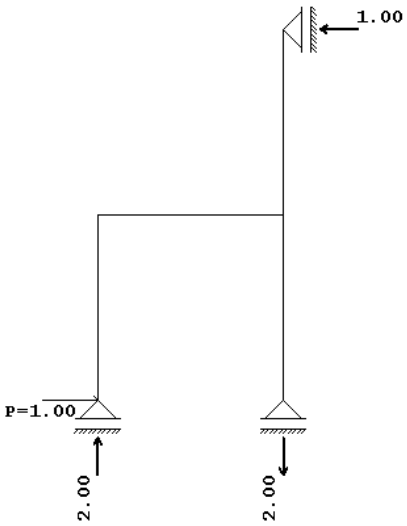


OSNOVNI SUSTAV

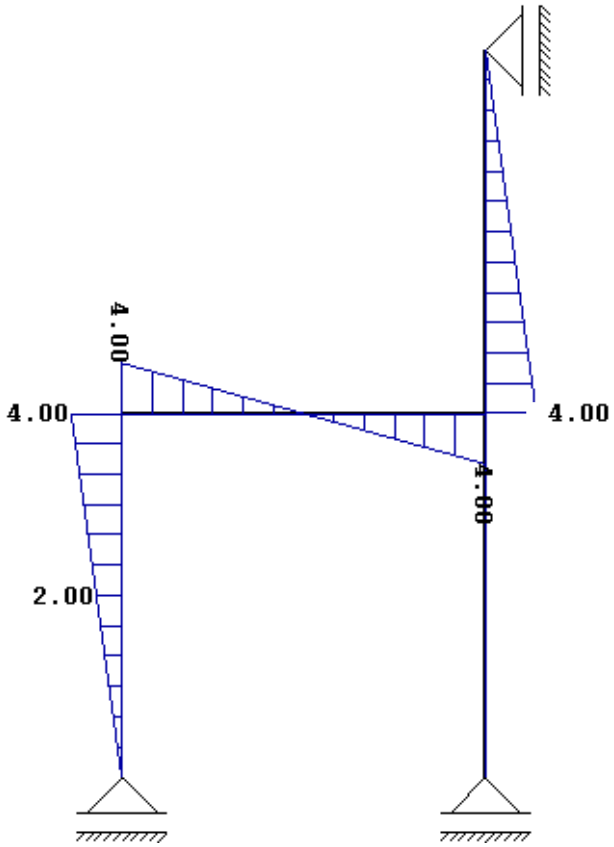
Osnovni sustav



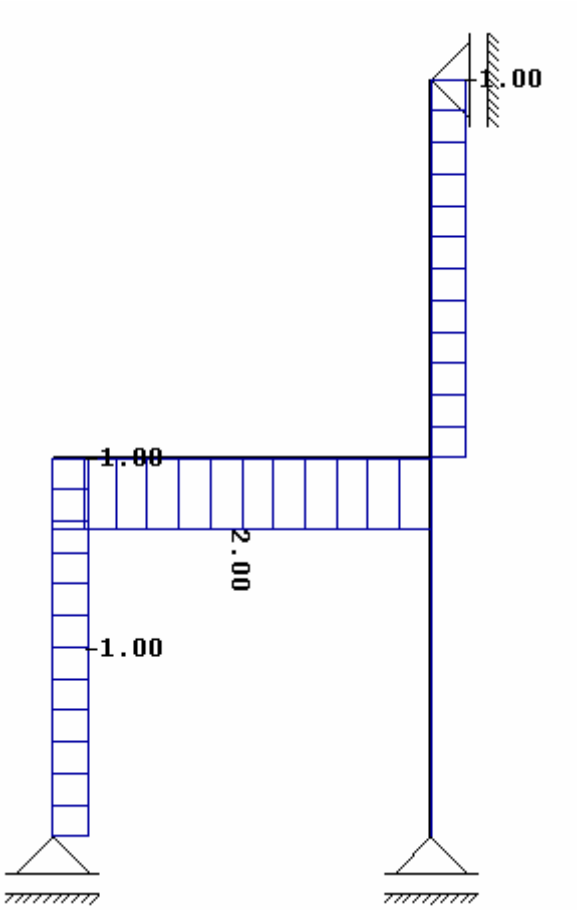
Reakcije



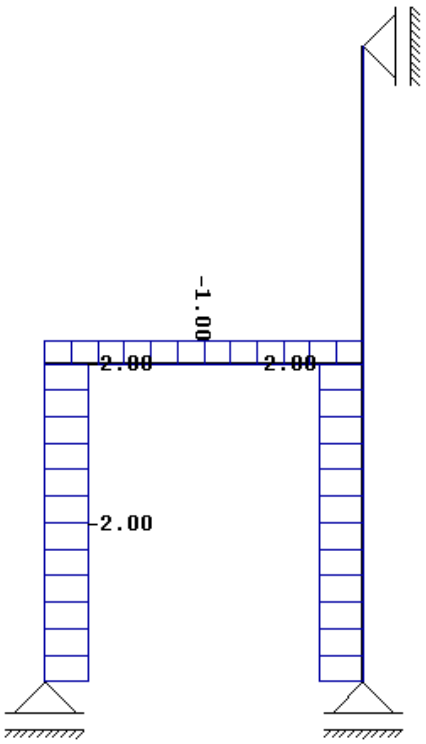
m1



t1

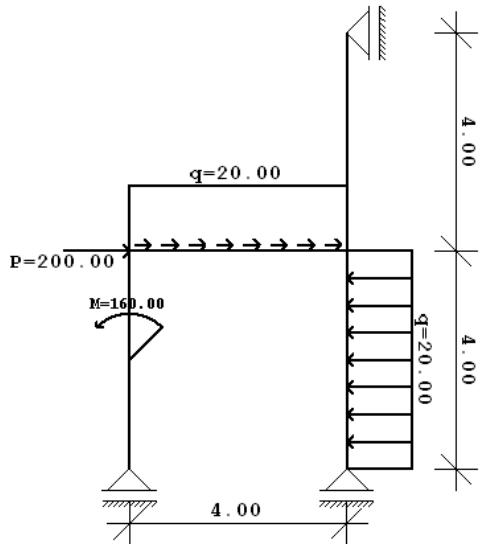


n1

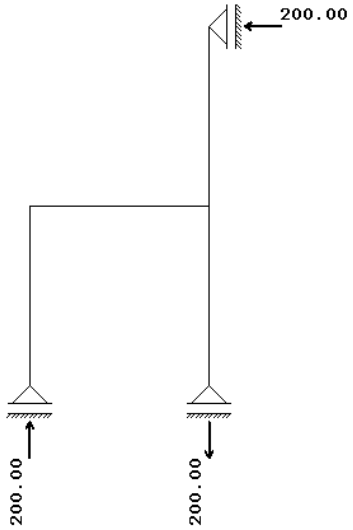


a_{11}= 64/EI

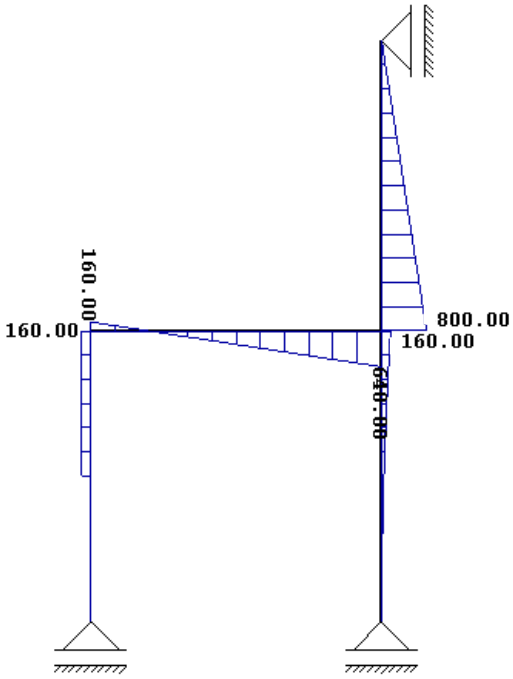
VANJSKO OPTEREĆENJE



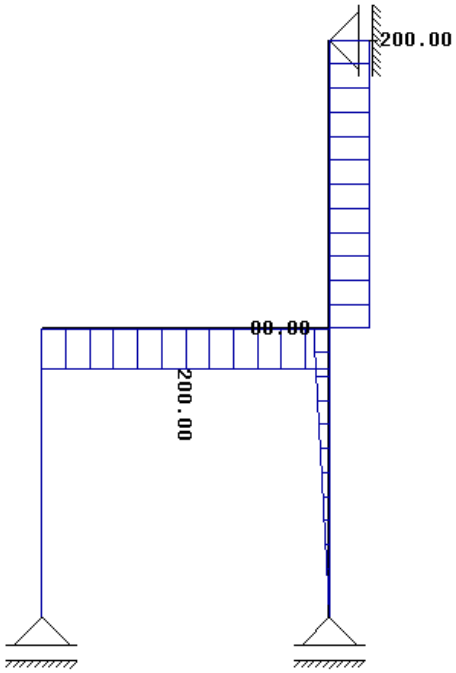
REAKCIJE



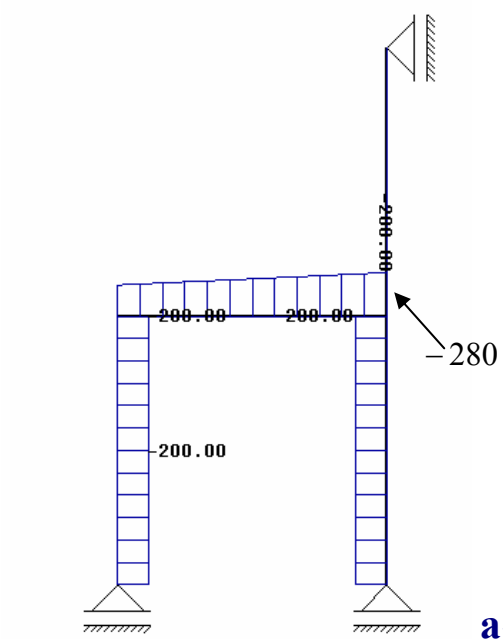
Mv



Tv



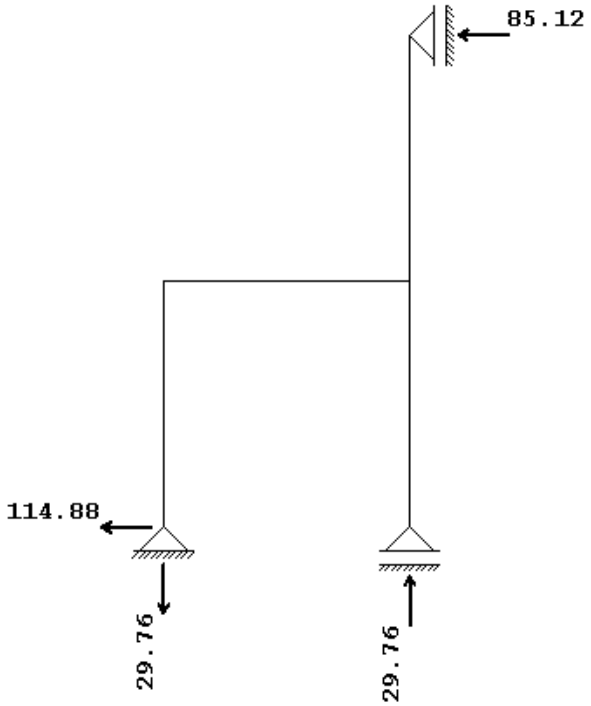
Nv



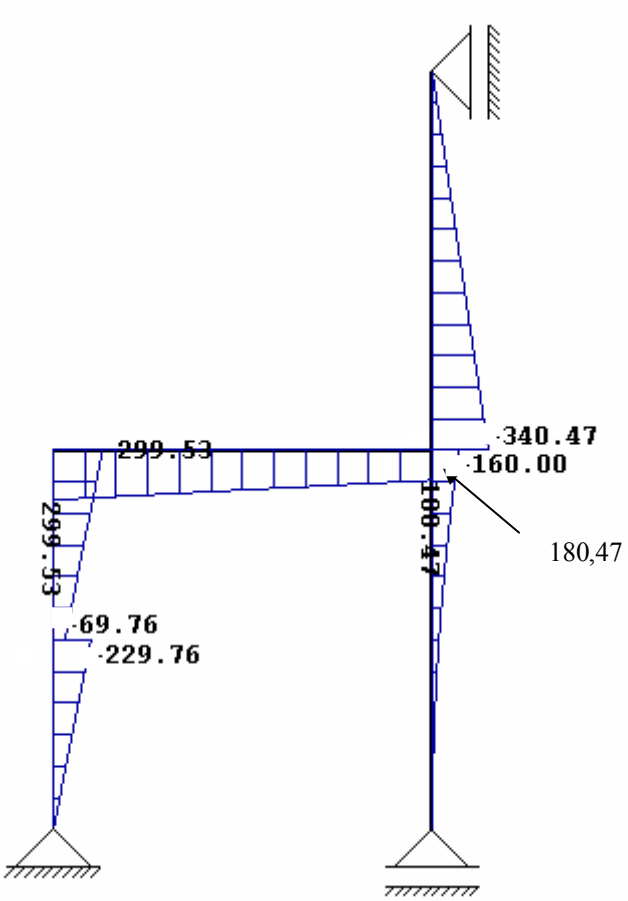
a_{1v}= 7360/EI X_1 = -114,99=-115 kN

KONAČNI DIJAGRAM

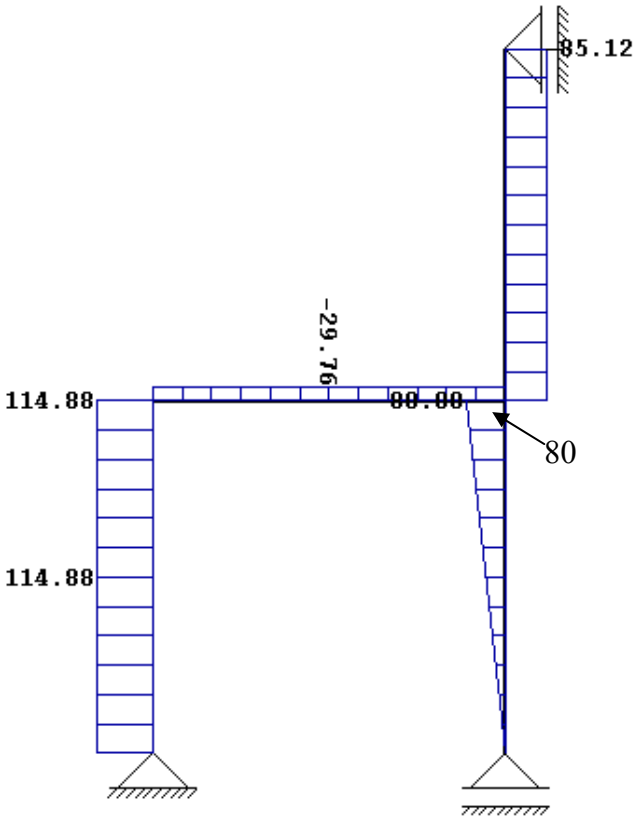
Konačne reakcije



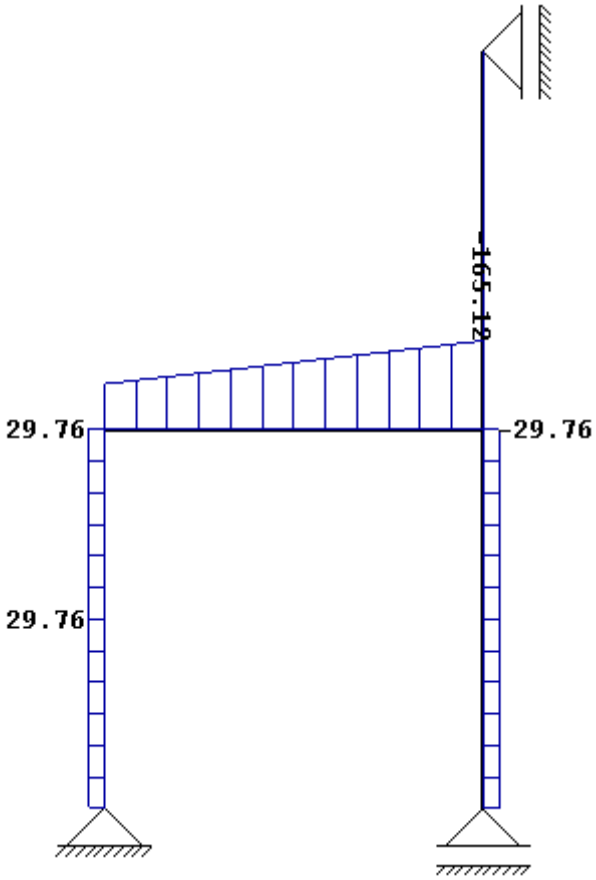
Mk



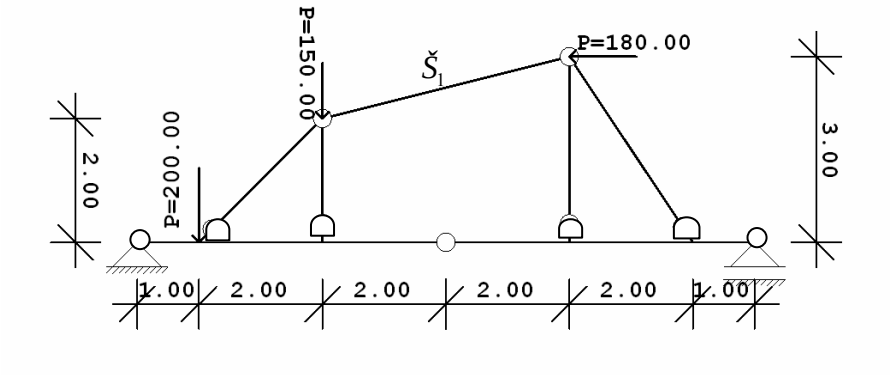
Tk



Nk

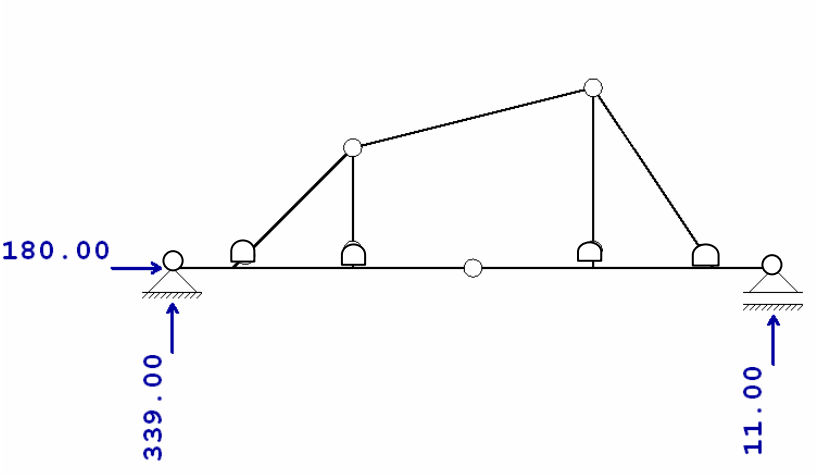


3: Odredite vrijednost sile u zadanom štapu!



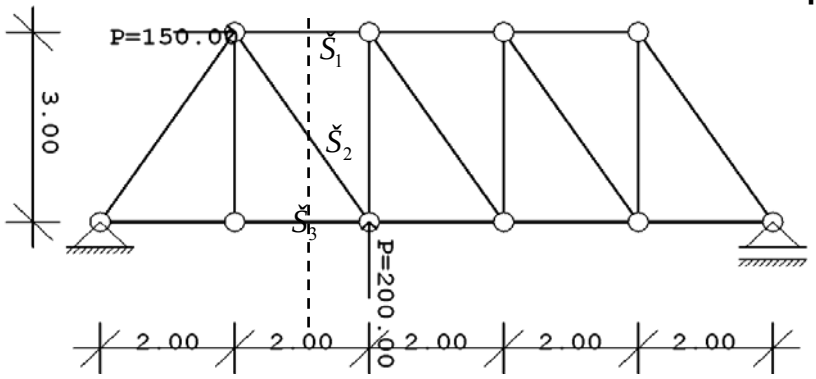
Rješenje:

reakcije



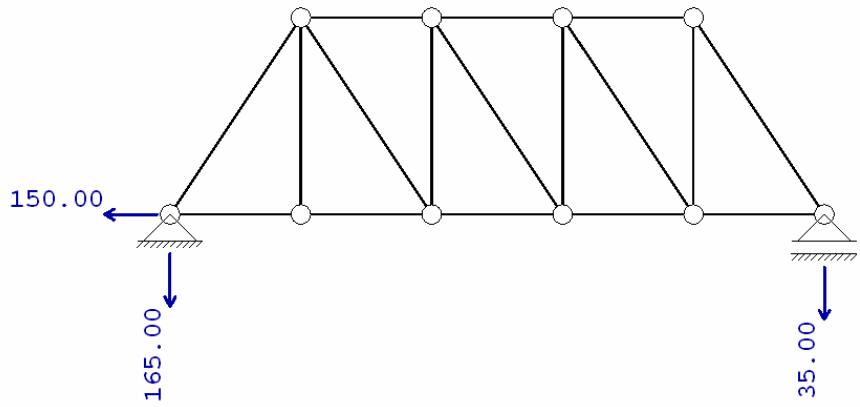
Vrijednost sile u **$Š_1$=-245.3 kN**

4. Ritterovom metodom odredite sile u označenim štapovima!



Rješenje:

reakcije



$Š_1$= 70 kN; $Š_2$= -198.3 kN; $Š_3$= 40 kN;