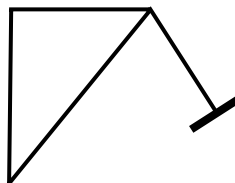
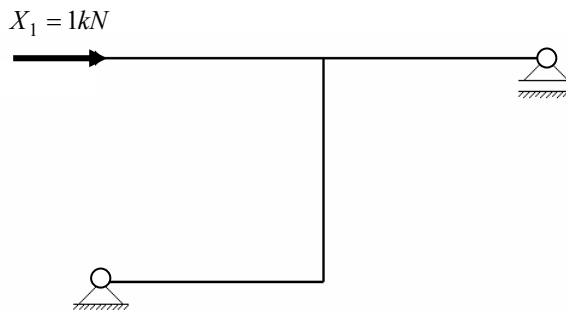
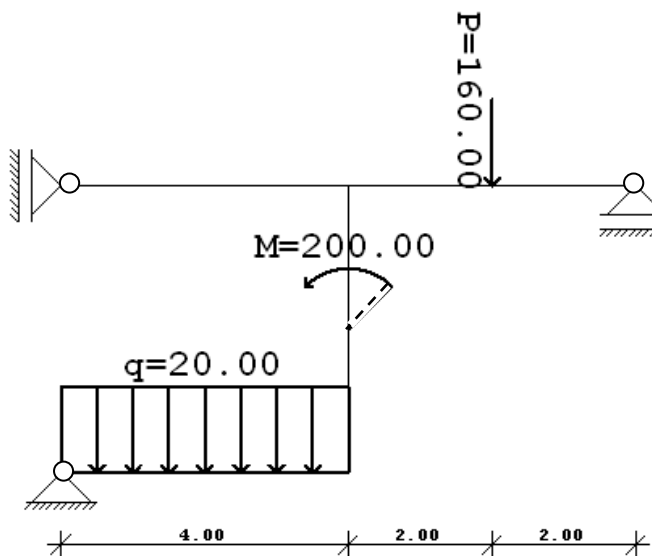


1. Odrediti stupanj statičke neodređenosti zadanog sustava te presijecanjem unutarnjih i vanjskih veza nacrtati dva statički određena sustava. (10 bodova)



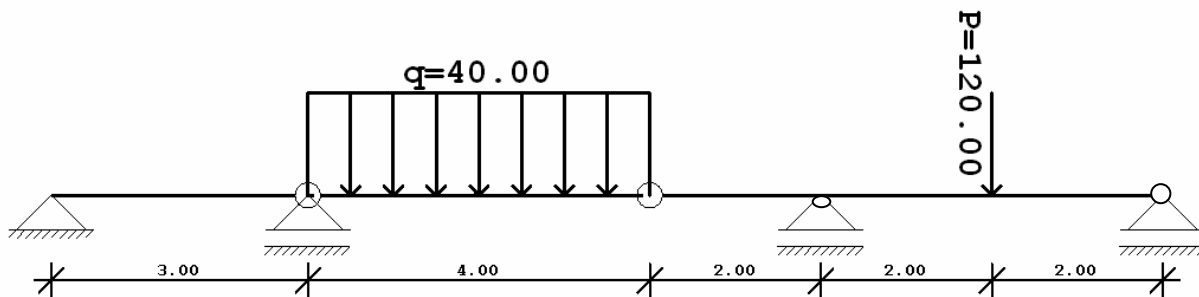
2. Za sustav na slici **METODOM SILA** odrediti dijagrame unutarnjih sila (M_K , T_K i N_K). Pri izračunu koeficijenta fleksibilnosti uzeti u obzir utjecaj **SAMO momenata savijanja** na deformiranje sustava. EI je konstantan za cijeli sustav. (50 bodova). ($m_I=10; M_V=10; M_K, T_K, N_K=3*5=15; a_{I1}=6; a_{IV}=6; X_I=3$)

Za izračunavanje koristiti **zadani osnovni sustav**.

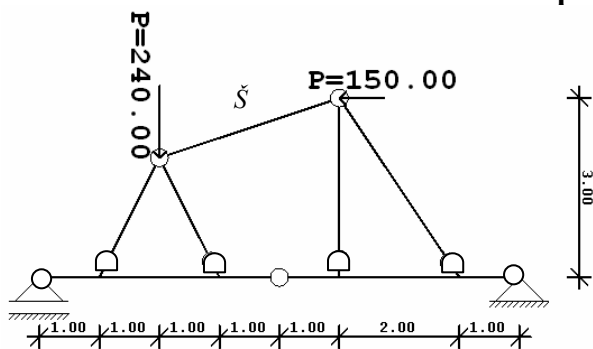


osnovni sustav za rješavanje

3. Odredite M i T dijagrame za zadani Gerberov nosač (25)



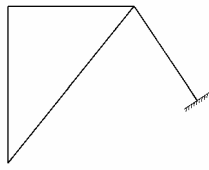
4. Odredite veličinu sile u označenom štapu ojačane grede (15 bodova)



ZA USMENI DIO ISPITA TREBA SAKUPITI 50 I VIŠE BODOVA, ALI ZADATAK IZ METODE SILA MORA BITI BODOVAN S NAJMANJE 25 BODOVA!!!

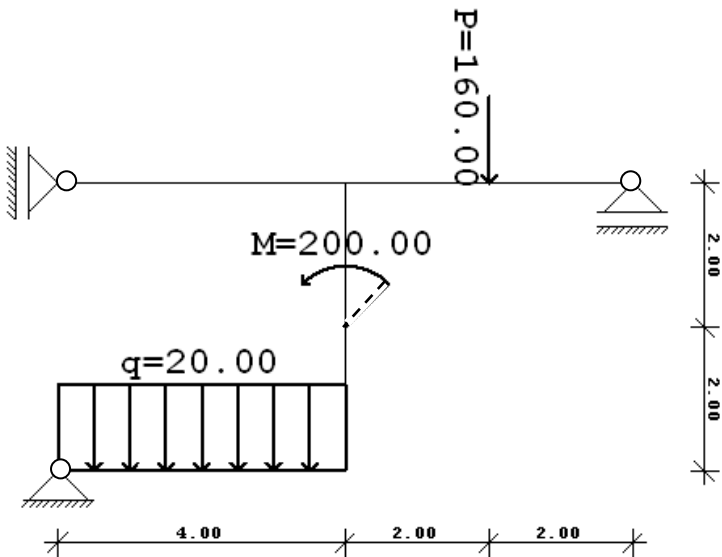
PRORAČUN KONSTRUKCIJA
20. veljače 2007. godine

1. zadatak - neodređenost

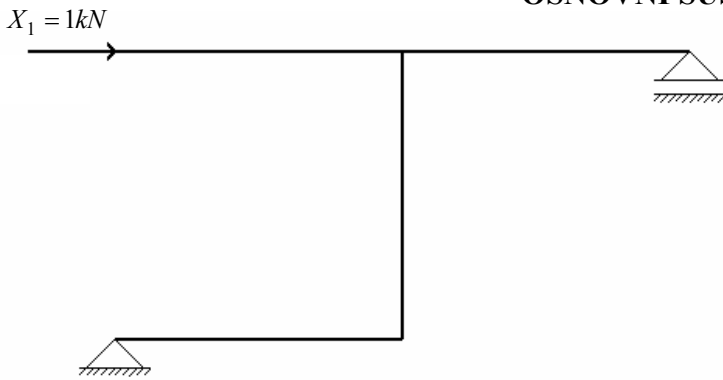


3 puta neodređen

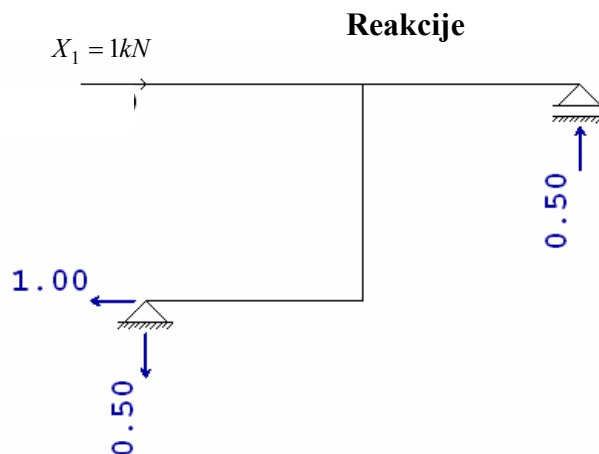
2. Zadatak METODA SILA



OSNOVNI SUSTAV

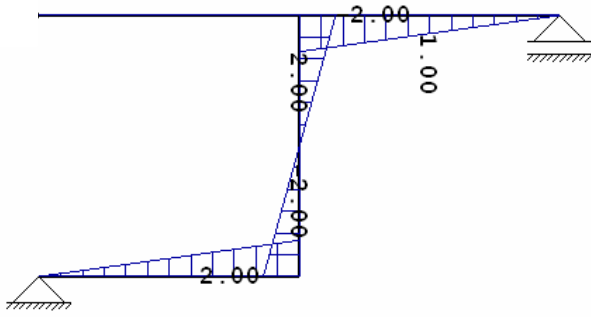


Osnovni sustav

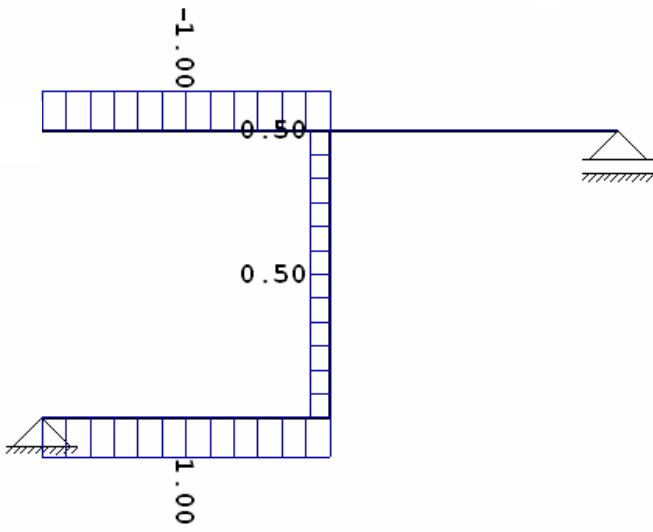


Reakcije

m1

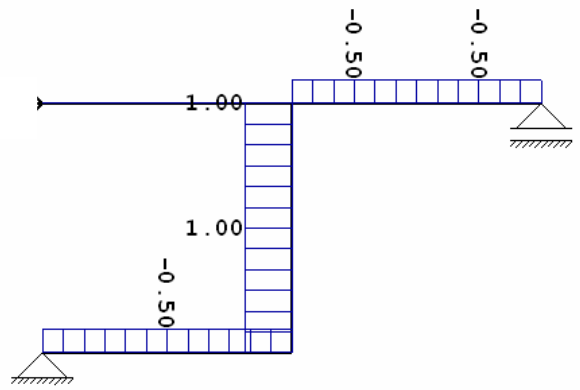


n1

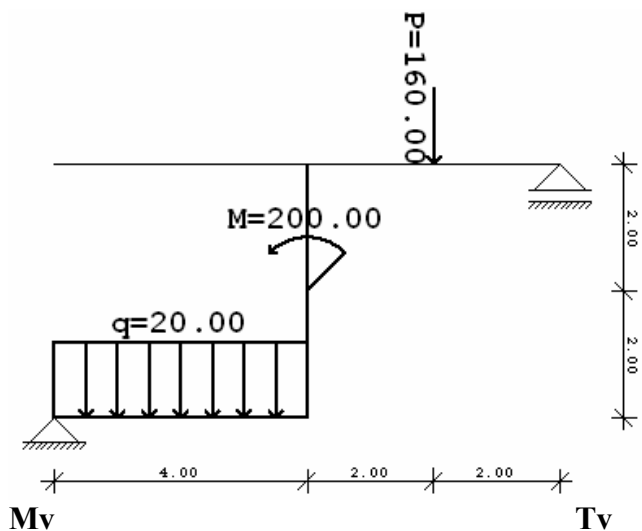


$a_{11} = 16/EI$

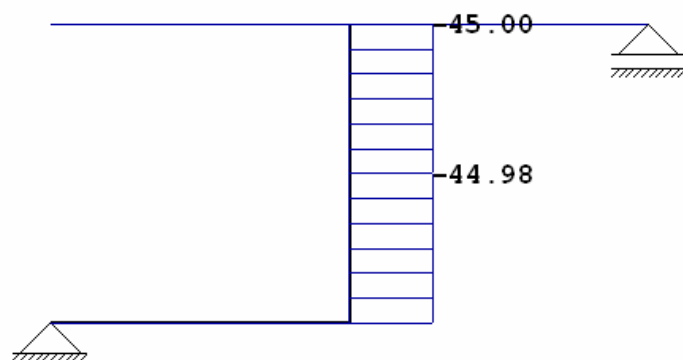
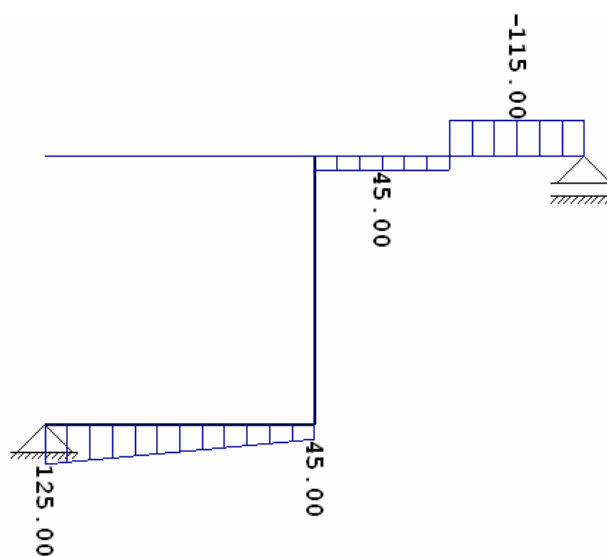
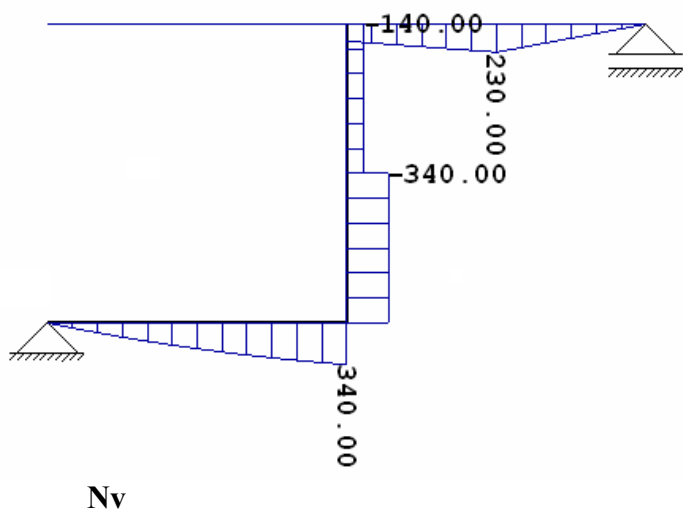
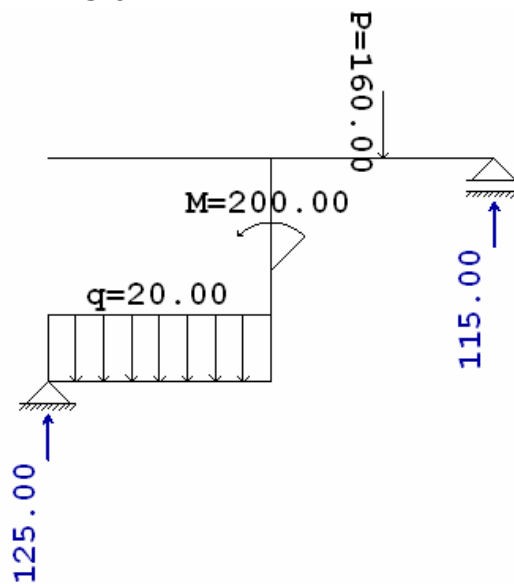
t1



VANJSKO OPTEREĆENJE



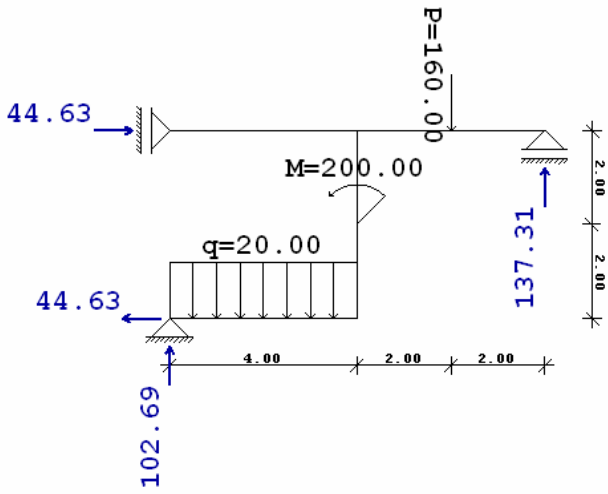
REAKCIJE



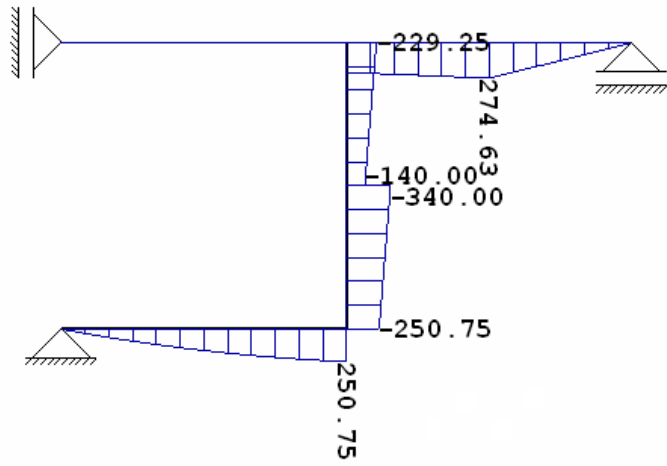
$$a_{1v} = -687,34 / EI \quad X_1 = 42,9 \text{ kN}$$

KONAČNI DIJAGRAM

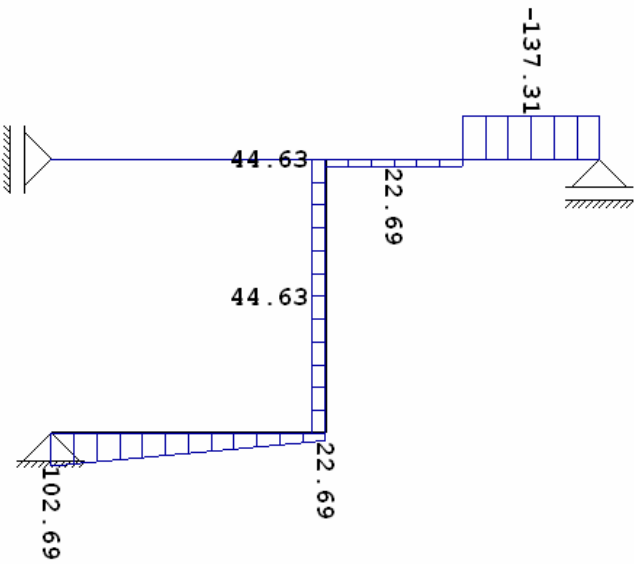
Konačne reakcije



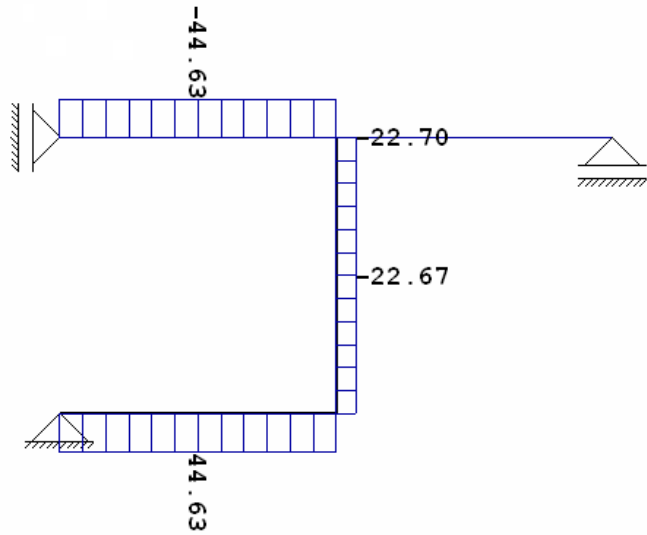
Mk



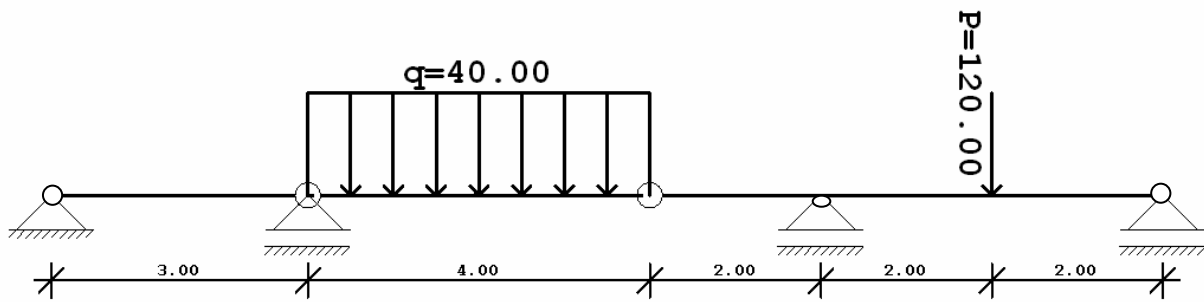
Tk



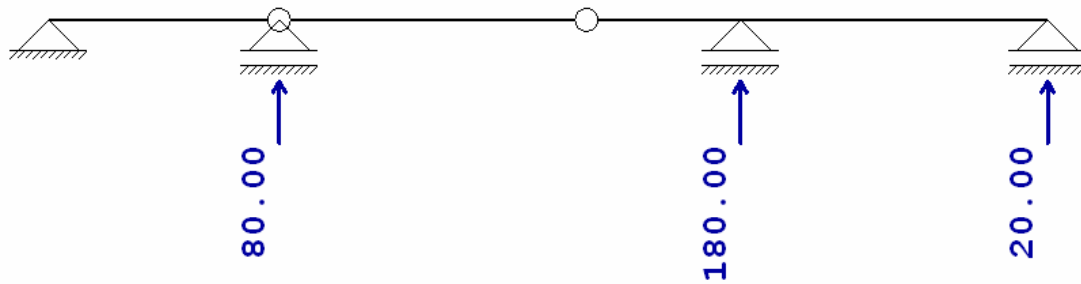
Nk



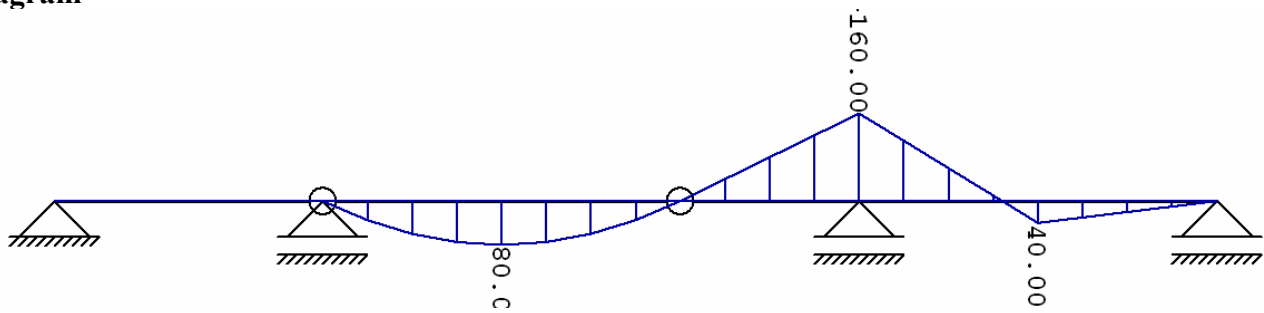
3. Odredite M i T dijagrame za zadani Gerberov nosač (25)



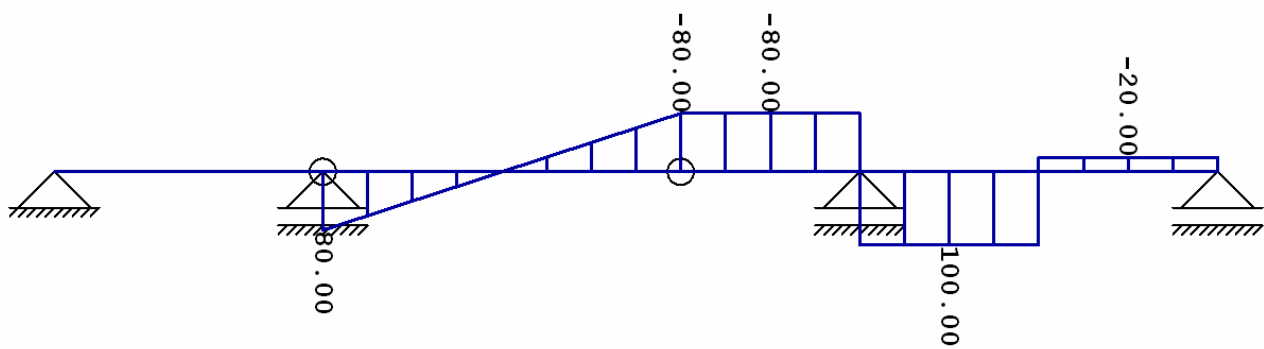
Reakcije



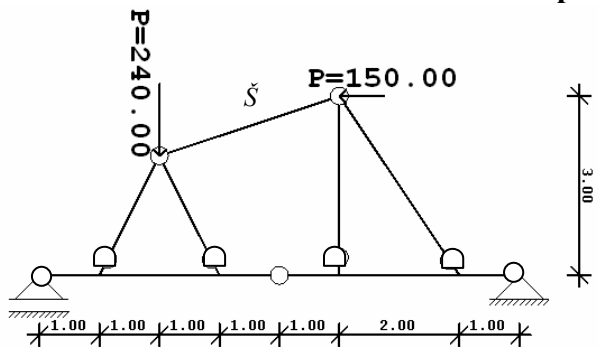
M dijagram



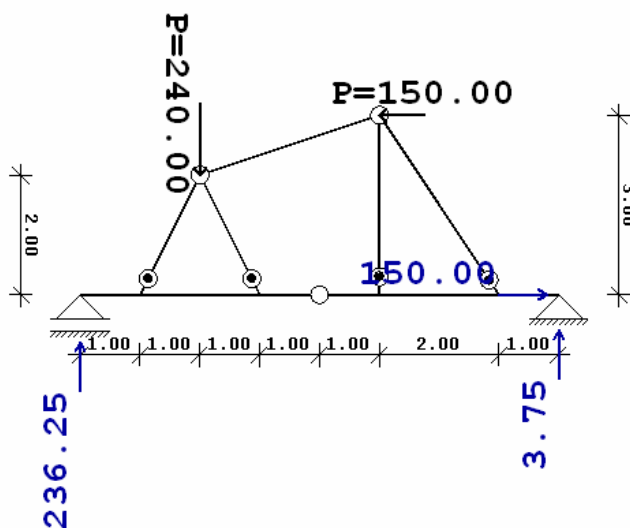
T dijagram



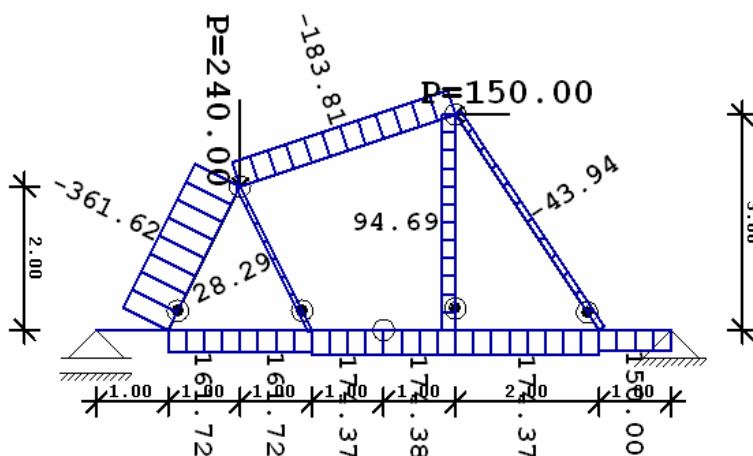
4. Odredite veličinu sile u označenom štapu ojačane grede (20 bodova)



Reakcije



Dijagram uzdužnih sila



$S = -183,8 \text{ kN}$