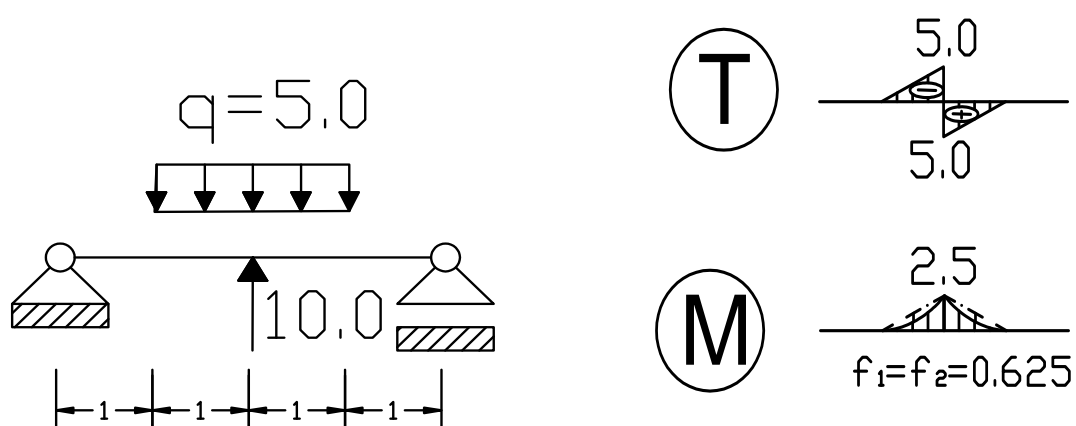


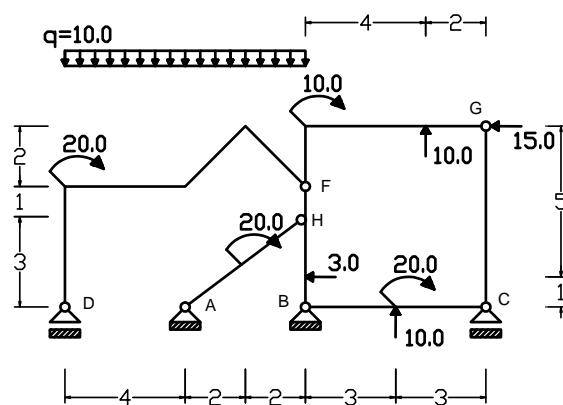
Chapter 1

Januar 2008

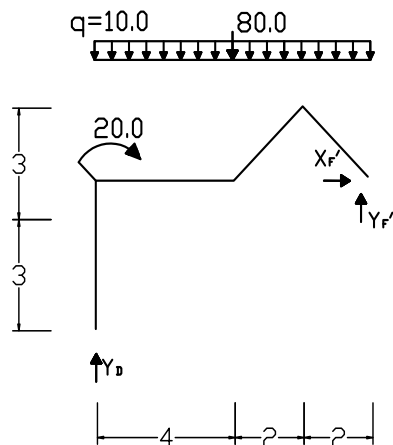
1.1 Uslovni zadatak



1.2 Prvi zadatak

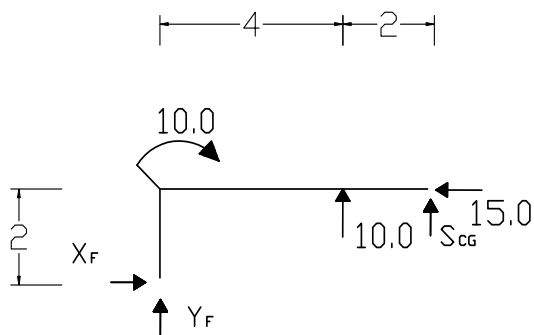


Deo D-E-F:



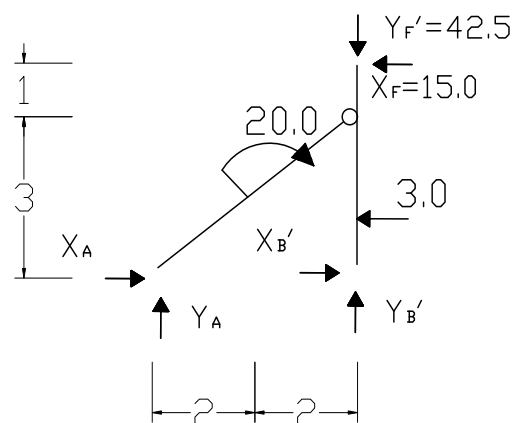
$$\begin{aligned}\sum M_F &= 0 : Y_D \cdot 8 + 20.0 - 8.0 \cdot 4 = 0 \\ &\Rightarrow Y_D = 37.5 \\ \sum Y &= 0 : Y_F' + 37.5 - 80 = 0 \\ &\Rightarrow Y_F' = 42.5 \\ \sum X &= 0 : X_F' = 0\end{aligned}$$

Deo F-G:



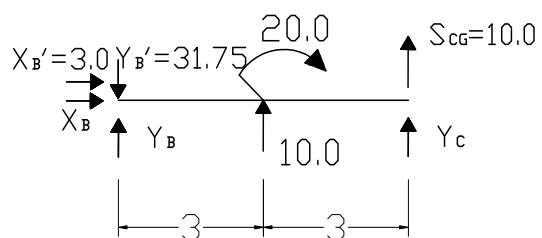
$$\begin{aligned}\sum M_F &= 0 : 10 - 10 \cdot 4 - S_{CG} \cdot 6 - 15 \cdot 2 = 0 \\ &\Rightarrow S_{CG} = -10.0 \\ \sum Y &= 0 : Y_F + 10.0 - 10 = 0 \\ &\Rightarrow Y_F = 0 \\ \sum X &= 0 : X_F = 15\end{aligned}$$

Deo A-H-B:



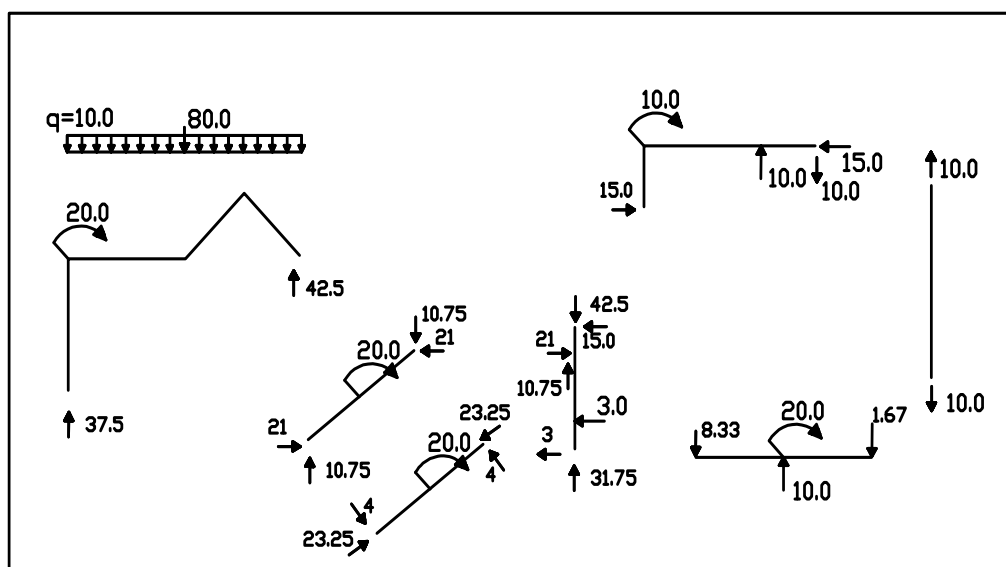
$$\begin{aligned}\sum M_H &= 0 : -15 \cdot 1 + 3 \cdot 2 - X_B' \cdot 3 = 0 \\ &\Rightarrow X_B' = -3.0 \\ \sum X &= 0 : X_A - 3 - 3 - 15 = 0 \\ &\Rightarrow X_A = 21.0 \\ \sum M_H &= 0 : 20 + 42.5 \cdot 4 - 15 \cdot 4 - 3 \cdot 1 - Y_B' \cdot 4 = 0 \\ &\Rightarrow Y_B' = 31.75 \\ \sum X &= 0 : Y_A - 42.5 + 31.75 = 0 \\ &\Rightarrow Y_A = 10.75\end{aligned}$$

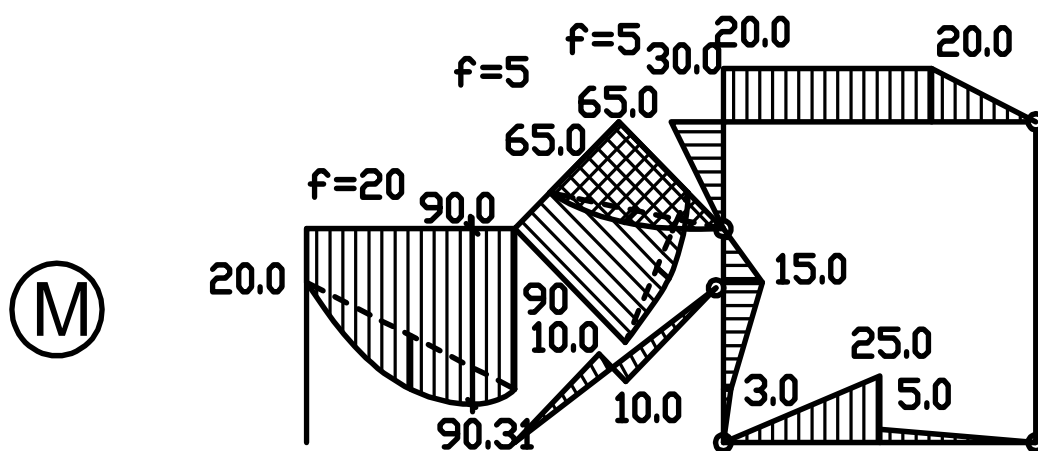
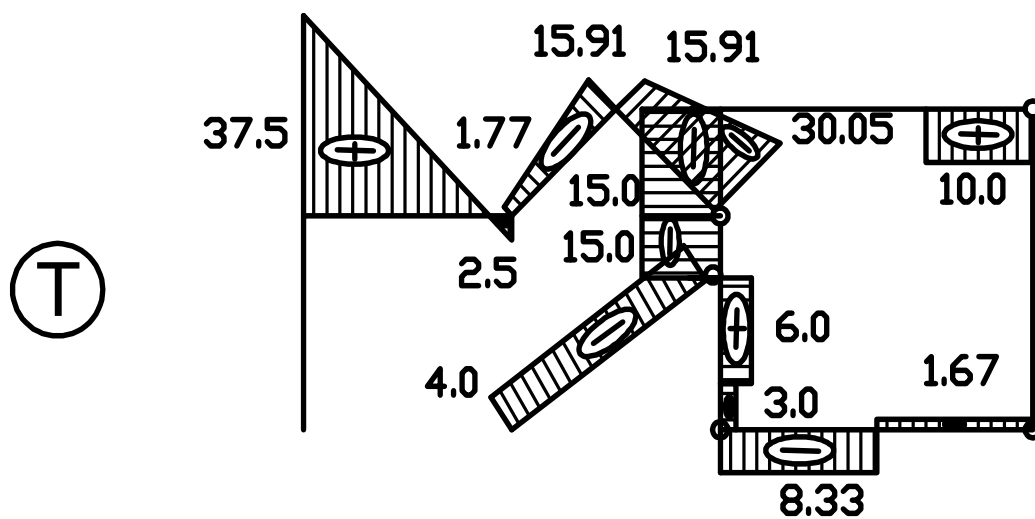
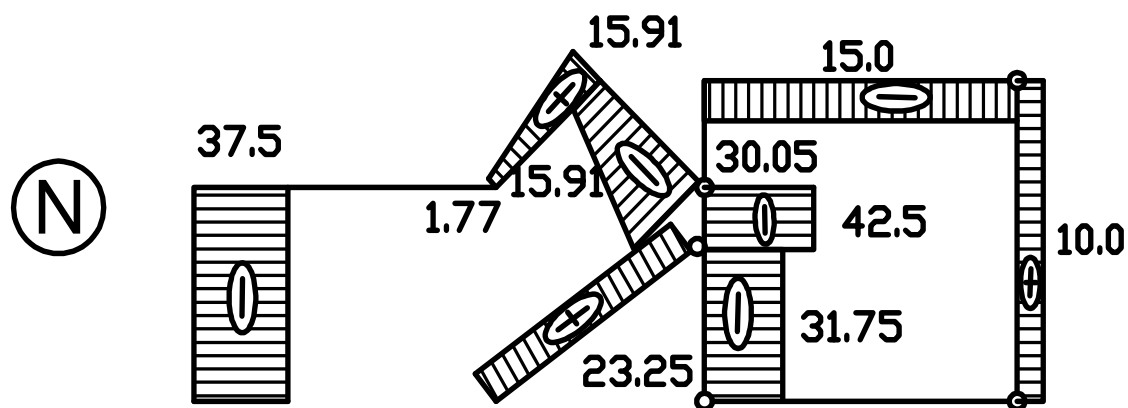
Deo A-B:



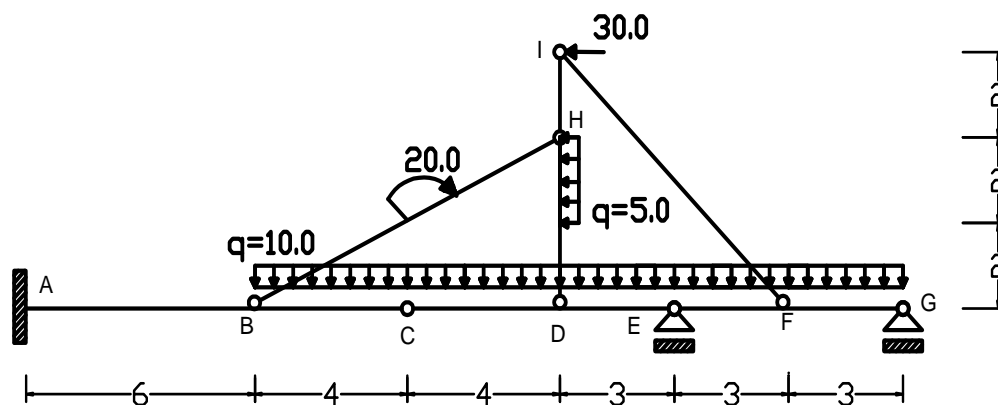
$$\begin{aligned}\sum M_B &= 0 : 20 - 10 \cdot 3 - 10 \cdot 6 - Y_C \cdot 6 = 0 \\ &\Rightarrow Y_C = -11.67 \\ \sum Y &= 0 : Y_B - 31.75 + 10 + 10 - 11.67 = 0 \\ &\Rightarrow Y_B = 23.42 \\ \sum X &= 0 : X_B = 3.0\end{aligned}$$

Stvarni smerovi sila i opterećenja na krajevima:

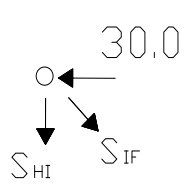




1.3 Drugi zadatak



Čvor I:



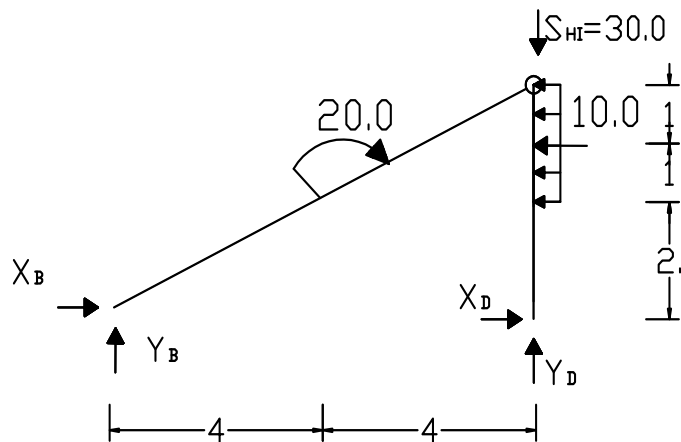
$$\sum X = 0 : S_{IF} \frac{\sqrt{2}}{2} - 30.0 = 0$$

$$\Rightarrow S_{IF} = 30\sqrt{2}$$

$$\sum Y = 0 : -S_{HI} - S_{IF} \frac{\sqrt{2}}{2} = 0$$

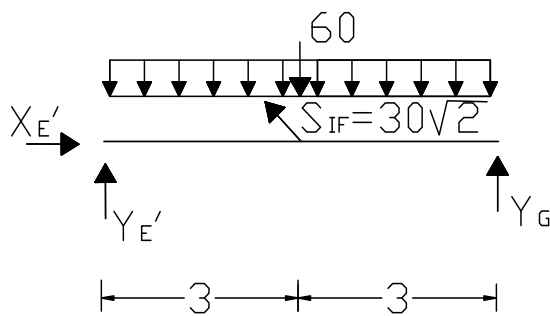
$$\Rightarrow S_{HI} = -30$$

Deo B-H-D:



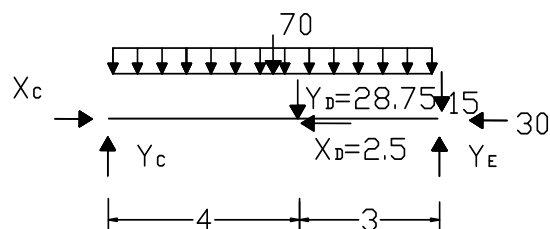
$$\begin{aligned}\sum M_B &= 0 : \\ &20 - 30 \cdot 8 - 10 \cdot 3 - Y_D \cdot 8 = 0 \\ &\Rightarrow Y_D = 28.75 \\ \sum Y &= 0 : Y_B - 30 + 28.75 = 0 \\ &\Rightarrow Y_B = 1.25 \\ \sum M_H &= 0 : 10 - X_D \cdot 4 = 0 \\ &\Rightarrow X_D = 2.5 \\ \sum X &= 0 : X_B - 10 + 2.5 = 0 \\ &\Rightarrow X_B = 7.5\end{aligned}$$

Deo E-G:



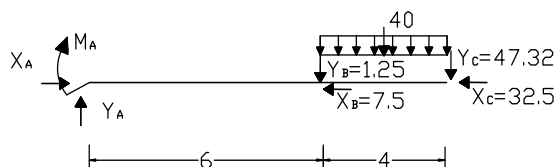
$$\begin{aligned}\sum M_E &= 0 : 30 \cdot 3 - Y_G \cdot 6 = 0 \\ &\Rightarrow Y_G = 15.0 \\ \sum Y &= 0 : Y_E' - 30.0 + 15 = 0 \\ &\Rightarrow Y_E' = 15.0 \\ \sum X &= 0 : X_E' = 30.0\end{aligned}$$

Deo C-E:



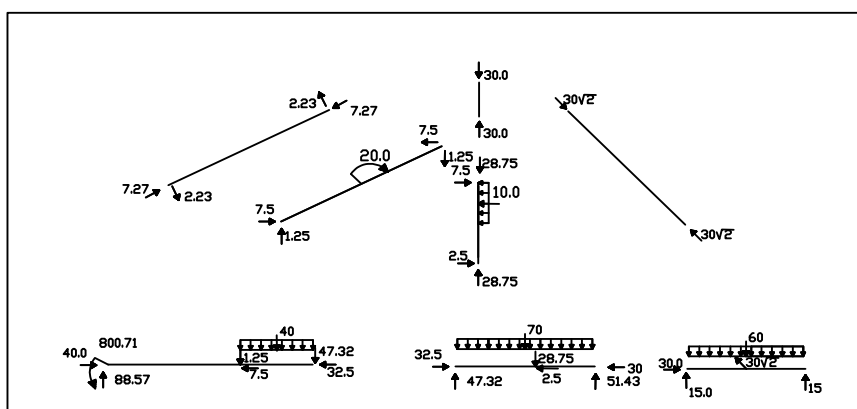
$$\begin{aligned}\sum M_C &= 0 : 70 \cdot 3.5 + 28.75 \cdot 4 + 15 \cdot 7 - Y_E \cdot 7 = 0 \\ &\Rightarrow Y_E = 66.43 \\ \sum Y &= 0 : Y_C - 70 - 28.75 - 15 + 66.43 = 0 \\ &\Rightarrow Y_C = 47.32 \\ \sum X &= 0 : X_C = 32.5\end{aligned}$$

Deo A-B-C:



$$\begin{aligned}\sum M_A &= 0 : M_A + 1.25 \cdot 6 + 40 \cdot 8 + 47.32 \cdot 10 = 0 \\ &\Rightarrow M_A = -800.71 \\ \sum Y &= 0 : Y_A = 88.57 \\ \sum X &= 0 : X_A - 7.5 - 32.5 = 0 \\ &\Rightarrow X_A = 40.0\end{aligned}$$

Stvarni smerovi sila i opterećenja na krajevima:





1.4 Treći zadatak

