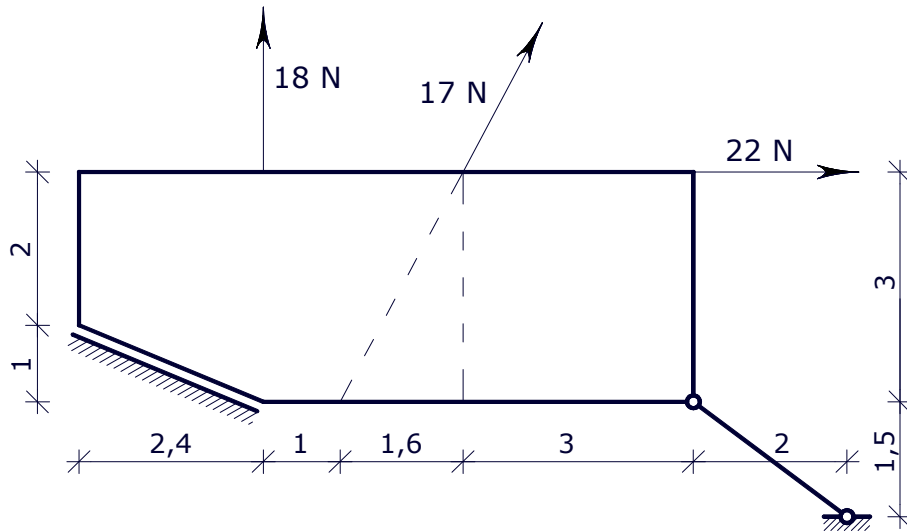
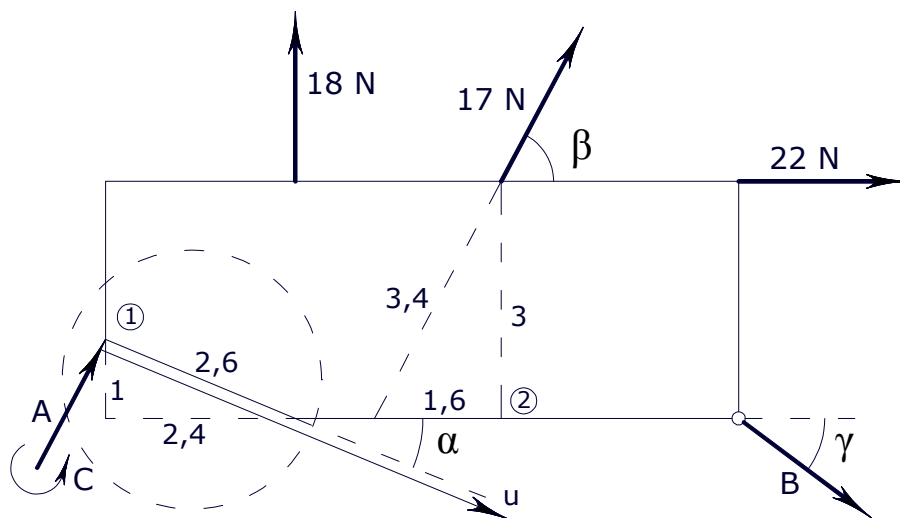


1. TREBA RJEŠITI STATIČKI ODREĐEN RAVNINSKI SUSTAV KOD KOJEG JE TIJELO SPOJENO S PODLOGOM KLIZNIM SPOJEM I ZGLOBNIM ŠTAPOM.



STATIČKA SHEMA:



BILO GDJE MOŽEMO STAVIT A NA SPOJU

$$\sum F_{ui} = 0 \rightarrow B$$

$$\alpha = \arctg \frac{1}{2,4} = 22,6199^\circ$$

$$\beta = \arctg \frac{3}{1,6} = 61,9275^\circ$$

$$\gamma = \arctg \frac{1,5}{2} = 36,8699^\circ$$

$$\sum F_{ui} = 0$$

$$-18 \cdot \sin \alpha + 17 \cdot \cos(\alpha + \beta) + 22 \cdot \cos \alpha + B \cos(\gamma - \alpha) = 0$$

$$B = \frac{18 \cdot \sin \alpha - 17 \cdot \cos(\alpha + \beta) - 22 \cdot \cos \alpha}{\cos(\gamma - \alpha)} = -15,4762N$$

$$\sum F_{yi} = 0$$

$$A \cdot \frac{2,4}{2,6} + 18 + 17 \cdot \frac{3}{3,4} - B \cdot \frac{1,5}{2,5} = 0$$

$$A = -45,8095 \text{ N}$$

$$\sum M_{(1)} = 0$$

$$C + 18 \cdot 2,4 + 17 \cdot \frac{3}{3,4} \cdot 5 - 17 \cdot \frac{1,6}{3,4} \cdot 2 - 22 \cdot 2 - B \cdot \frac{1,5}{2,5} \cdot 8 + B \cdot \frac{2}{2,5} \cdot 1 = 0$$

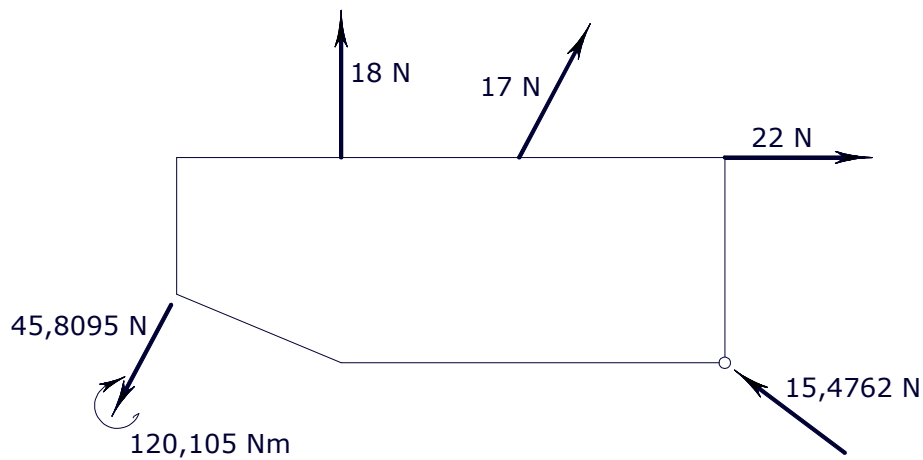
$$C = -120,105 \text{ Nm}$$

KONTROLA: $\sum M_{(2)}$

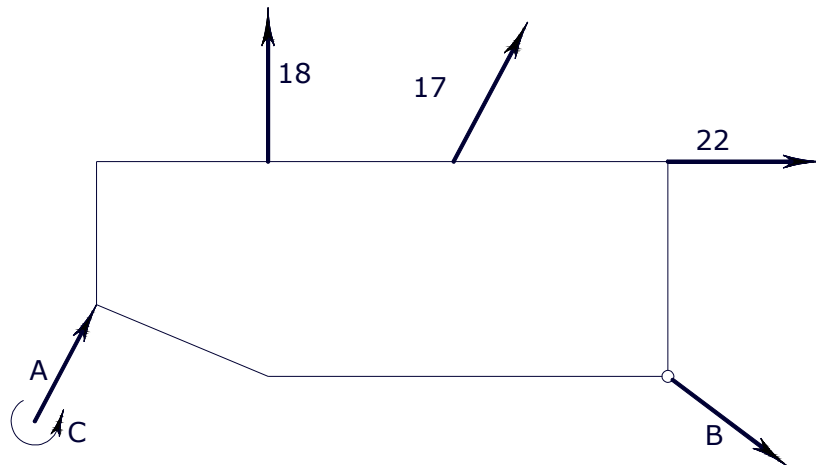
$$\sum M_{(2)} = 0$$

$$A \left(-5 \cdot \frac{2,4}{2,6} - 1 \cdot \frac{1}{2,6} \right) - 2,6 \cdot 18 - 17 \cdot \frac{1,6}{3,4} \cdot 3 - B \cdot \frac{1,5}{2,5} \cdot 3 - 3 \cdot 22 + C = 0$$

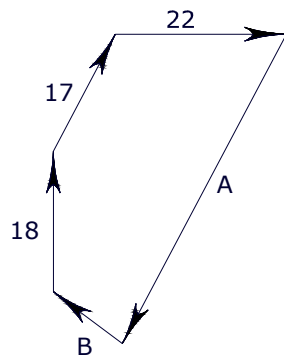
SKICA STVARNIH DJELOVANJA:



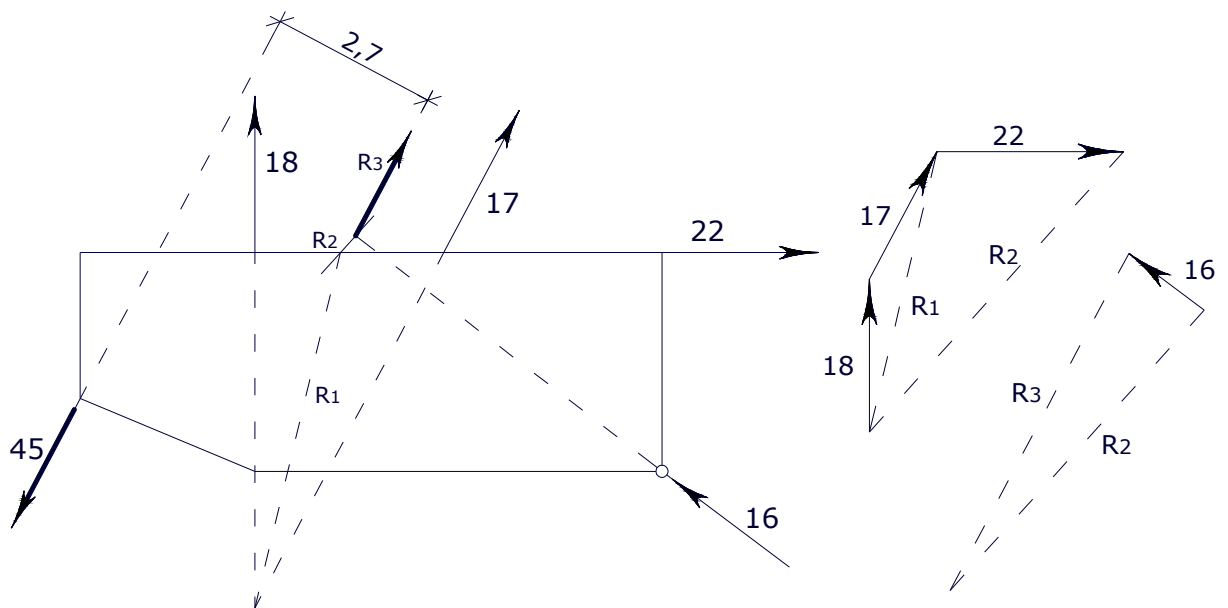
GRAFIČKO RJEŠENJE:



POLIGON SILA – ODREDITI A I B

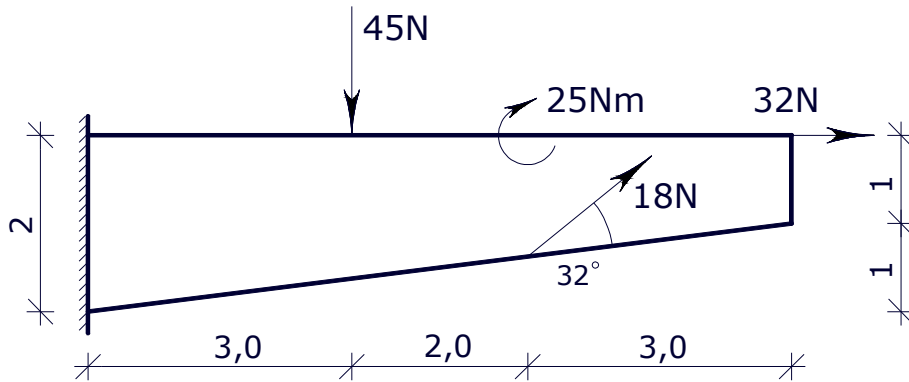
OČITANO: $A = -45 \text{ N}$ $B = -16 \text{ N}$

DIREKTNIM POSTUPKOM ODREDITI REZULTANTU ZADANIH SILA I SILE B

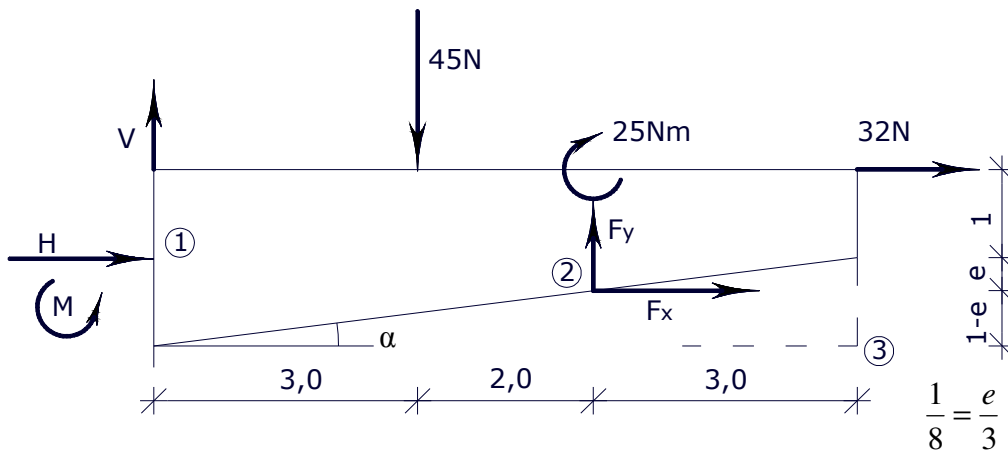
SILA A I R_3 ČINE SPREG ČIJI MOMENT IZNOSI $C = 2,7 \cdot 45 = 121,5 \text{ Nm}$

MOMENT U KLIZNOM SPOJU MORA BITI SUPROTNOG SMJERA

2. TREBA RIJEŠITI PRIKAZANI STATIČKI SUSTAV
-REZULTIRAJUĆA SILA DJELOVANJA U KRUTOM SPOJU PROLAZI
RASPOLOVIŠTEM LINIJE KRUTOG SPOJA



- a) RAČUNSKO RJEŠENJE
STATIČKA SHEMA:



KOMPONENTE F_x, F_y :

$$e = 0,375$$

$$\alpha = \arctg \frac{1}{8} = 7,125^\circ$$

$$F_x = 18 \cos(\alpha + 32) = 13,964N$$

$$F_y = 18 \sin(\alpha + 32) = 11,358N$$

$$\sum F_{xi} = 0; \quad H + 13,964 + 32 = 0 \Rightarrow H = -45,964N$$

$$\sum F_{yi} = 0; \quad V - 45 + 11,358 = 0 \Rightarrow V = 33,642N$$

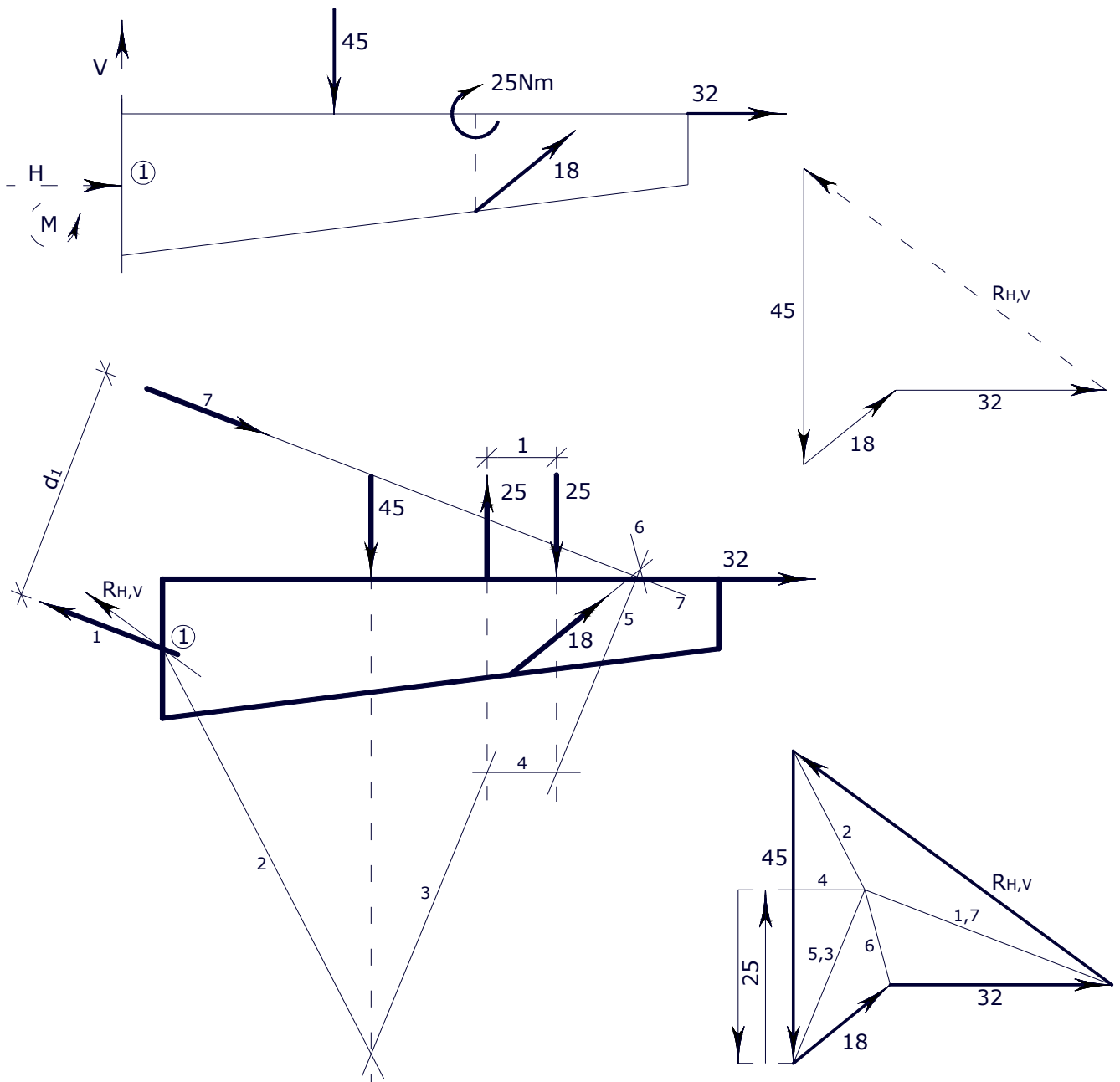
$$\sum M_{(1)} = 0; \quad M - 45 \cdot 3 + 11,358 \cdot 5 + 13,964 \cdot 0,375 - 32 \cdot 1 - 25 = 0$$

$$M = 129,97Nm$$

KONTROLA:

$$\sum M_{(3)} = 0$$

GRAFIČKO RJEŠENJE POMOĆU VERIŽNOG POLIGONA:



OČITANO: $R_{H,V} = 58N$; $R_H = 47N$; $R_V = 33N$
 $d_1 = 3,4m$

NEURAVNOTEŽENI MOMENT: $M = d_1 \cdot 1 = d_1 \cdot 7$; $1 = 7$
 $"1" = "7" = 38N$ PA JE $M = 3,4 \cdot 38 = 129,2Nm$

STVARNI MOMENT U LEŽAJU TREBA URAVNOTEŽITI OVAJ SPREG PA JE M SUPROTAN

$$M = 129,2 \text{ Nm } \odot$$