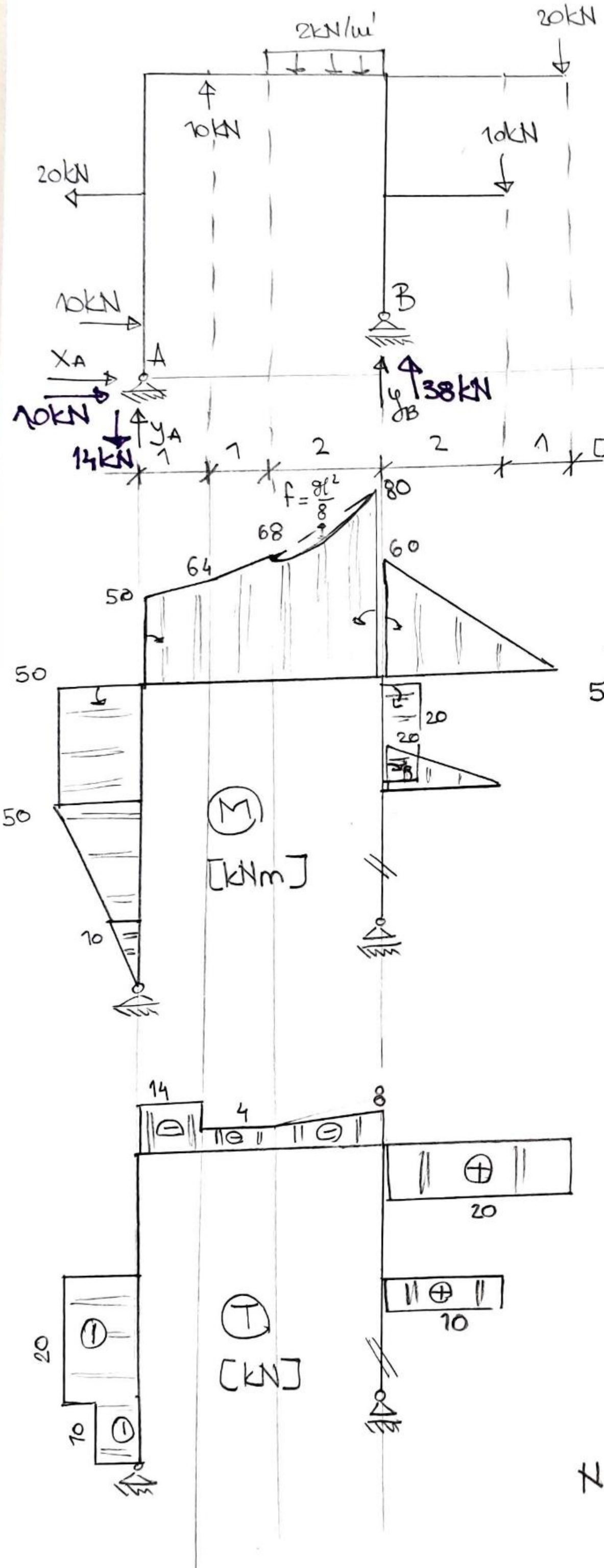
1. Nacrtati statičke dijagrame za prikazani okvirni nosač:



Reakcije oslonaca:

$\sum X_i = 0$,

$X_A - 20 + 10 = 0$, $X_A = 10kN$

$\sum M_A = 0$ ↺+

$y_B \cdot 4 - 10 \cdot 6 - 20 \cdot 7 - 2 \cdot 2 \cdot 3 + 10 \cdot 1 + 20 \cdot 3 - 10 \cdot 1 = 0$

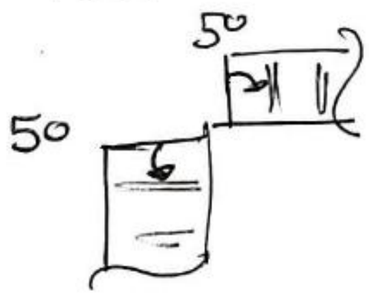
$y_B = 38kN$,

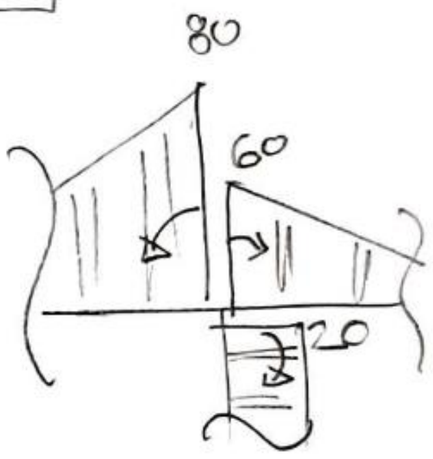
$\sum M_B = 0$ ↺+

$y_A \cdot 4 - 20 \cdot 2 + 10 \cdot 3 - 2 \cdot 2 \cdot 1 + 20 \cdot 3 + 10 \cdot 2 - 10 \cdot 1 = 0$

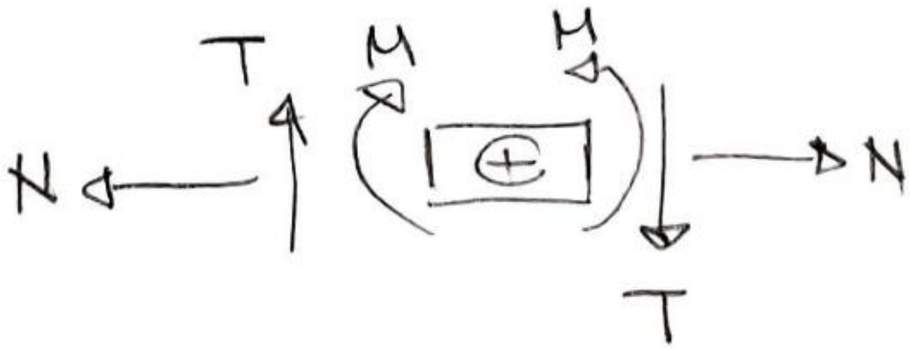
$y_A = -14kN$,

ravnoteža čvora:

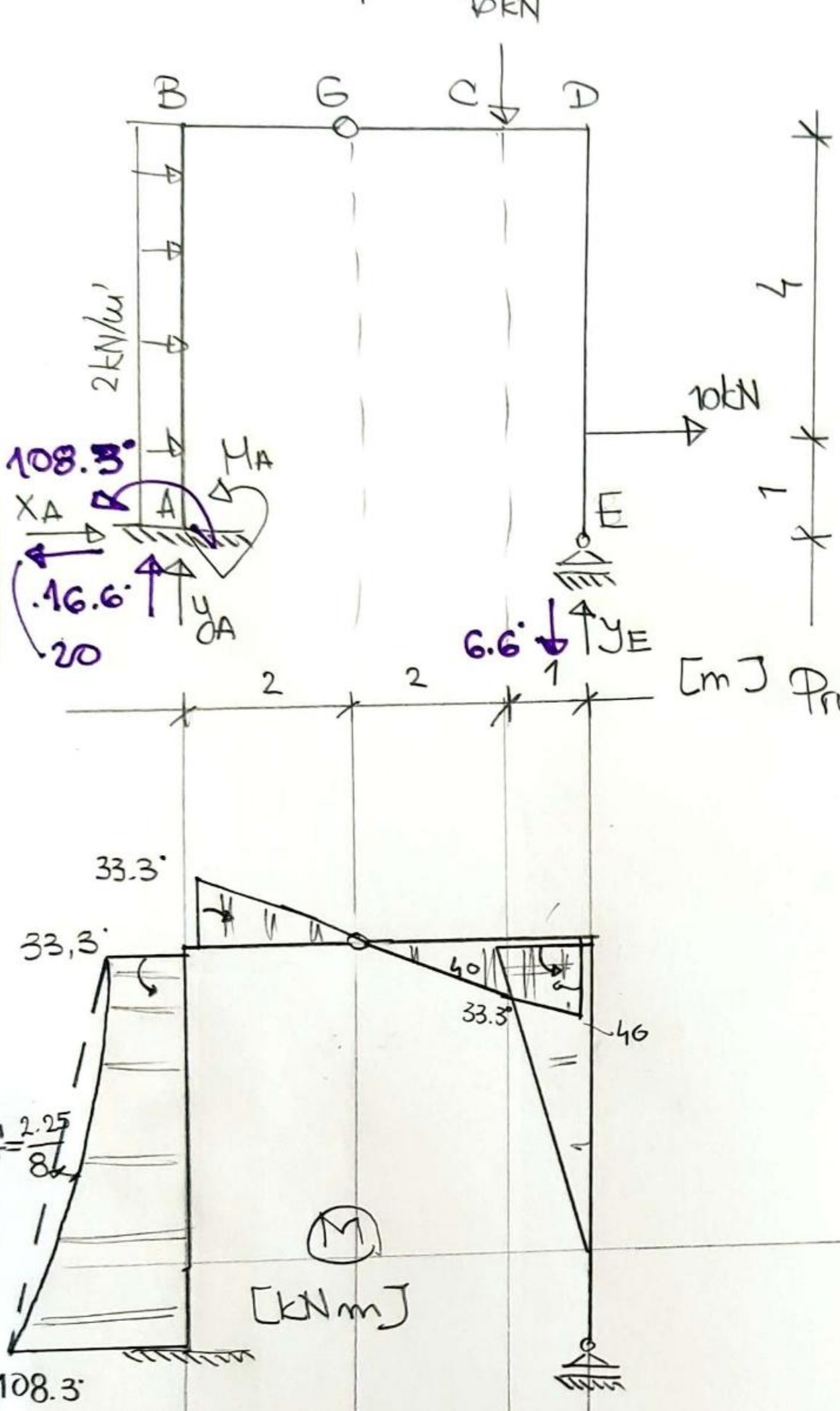




konvencija:



2. Odrediti otpore oslonaca i nacrtati statičke dijagrame:



$\sum X = 0, \quad X_A + 10 + 2.5 = 0, \quad \boxed{X_A = -20\,kN}$

$\sum M_G^D = 0, \quad \oplus$

$y_E \cdot 3 + 10 \cdot 4 - 10 \cdot 2 = 0, \quad \boxed{y_E = -6{,}6^\circ\,kN}$

$\sum M_A = 0 \quad \oplus \quad -6{,}6^\circ \cdot 5 - 10 \cdot 1 - 10 \cdot 4 - 2.5 \cdot 2{,}5 + H_A = 0, \quad \boxed{H_A = 108{,}3^\circ\,kNm}$

$\sum M_G^L = 0, \quad \oplus$

$y_A \cdot 2 - 108{,}3^\circ + 20 \cdot 5 - 2.5 \cdot 2{,}5 = 0$

$\boxed{y_A = 16{,}6^\circ\,kN}$

Proverа: $\sum y = 0, \quad 16{,}6^\circ - 10 - 6{,}6^\circ = 0 \quad (T)$