

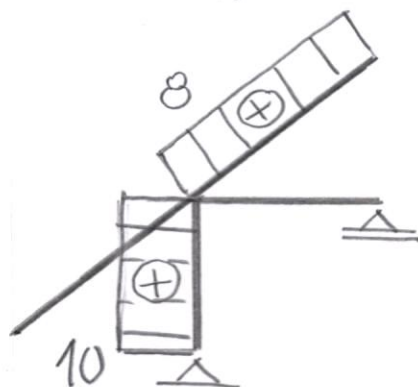
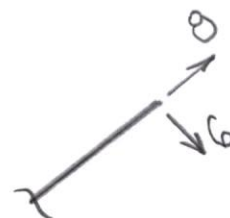
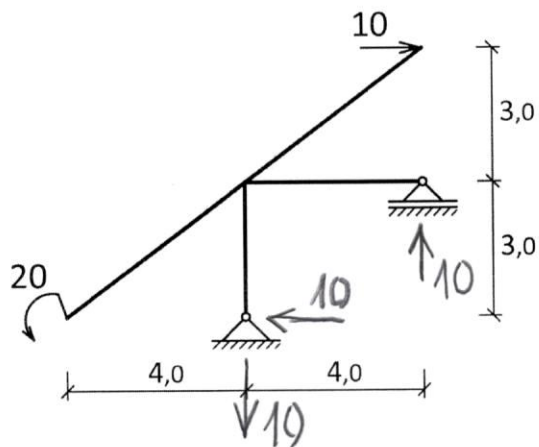
Напомена: У свим задацима димензије за дужине и силе су: m, N .

ГРАЂЕВИНСКИ ФАКУЛТЕТ УНИВЕРЗИТЕТА У БЕОГРАДУ
 Усмени (теоријски) део испита из **ТЕХНИЧКЕ МЕХАНИКЕ 1**
 (писмени део одржан 24.09.2021.)

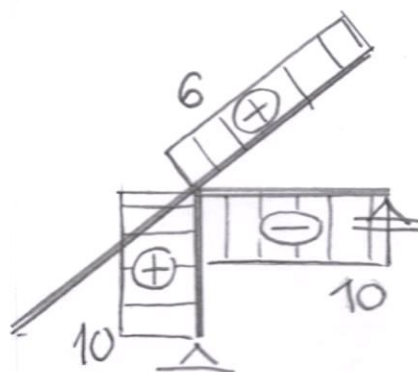
- решења -

1. ЗАДАТАК (условни 50 %)

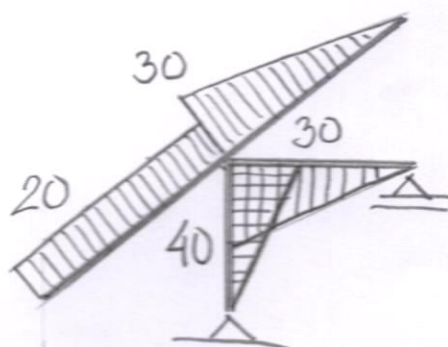
a)



N

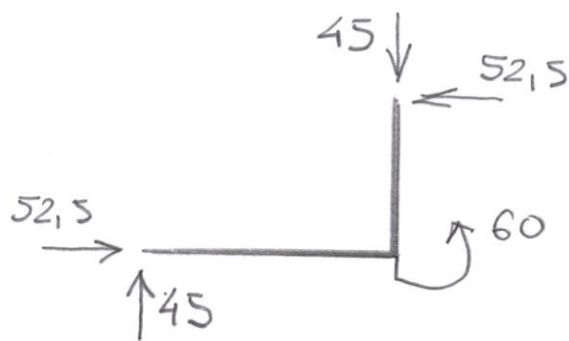
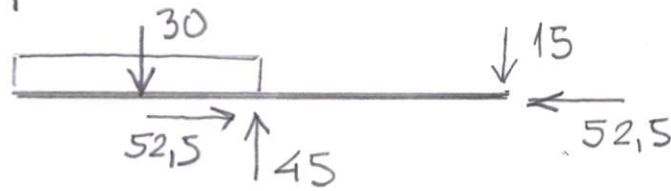
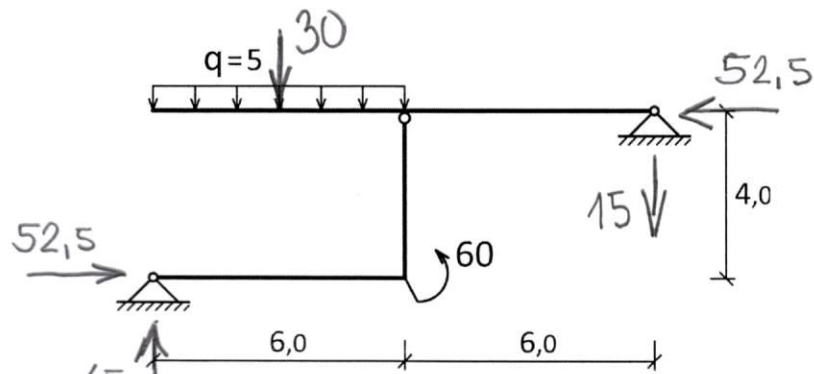


T

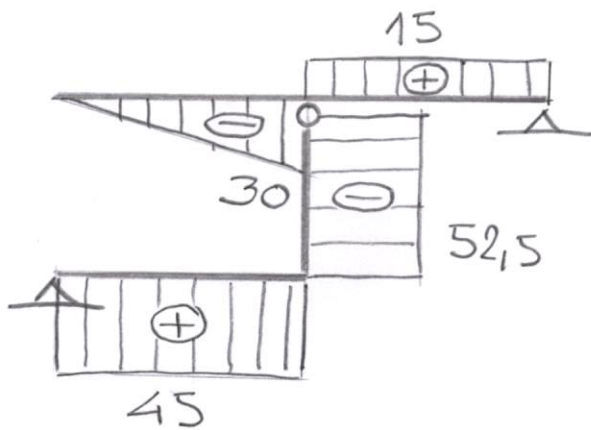
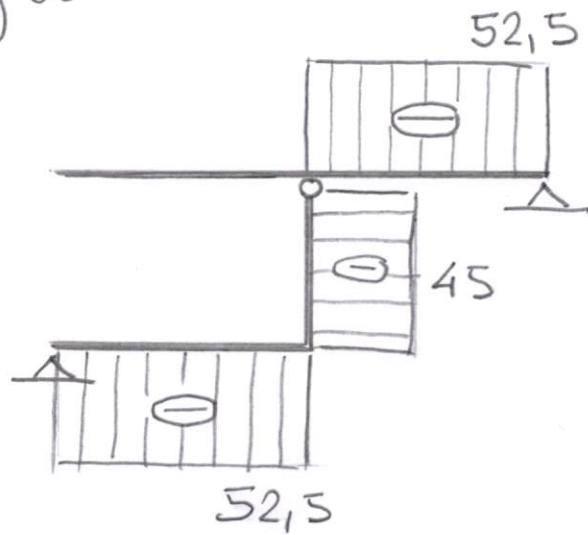


M

6)

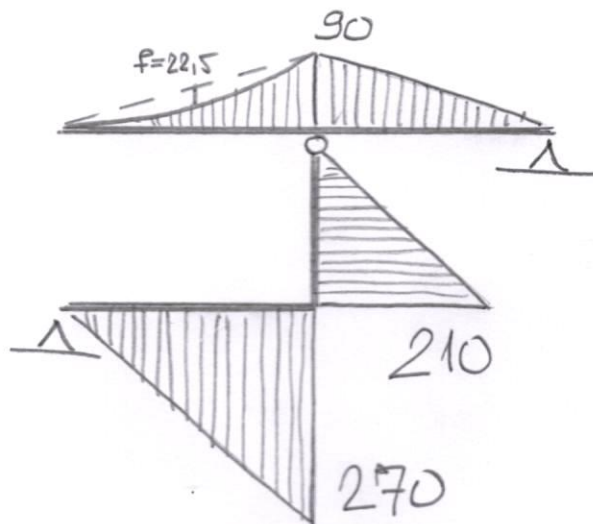


N

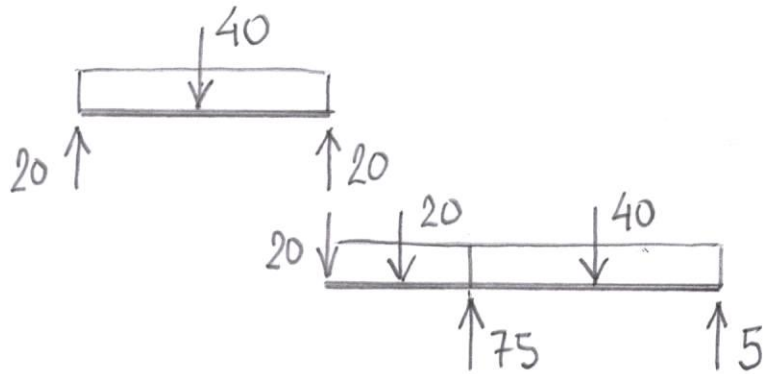
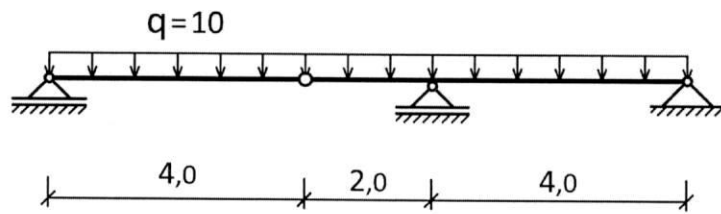


T

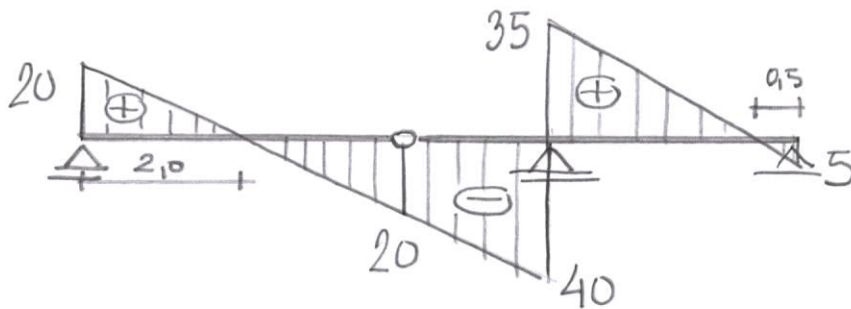
M



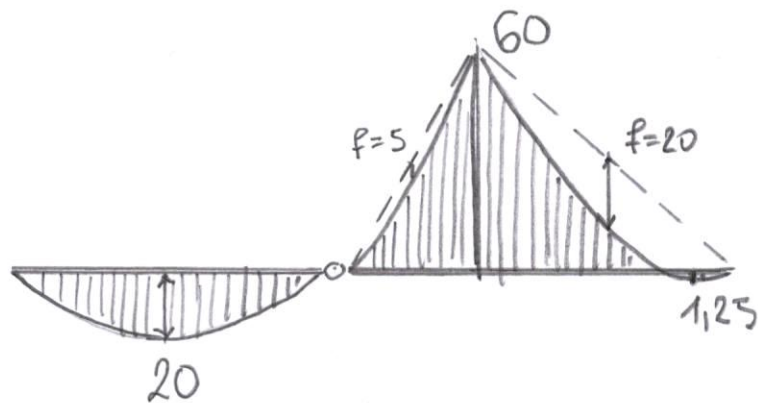
B)



N

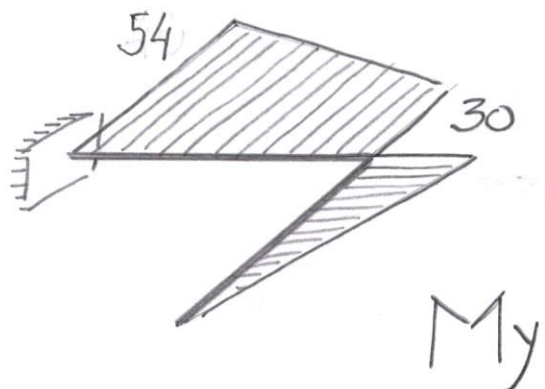
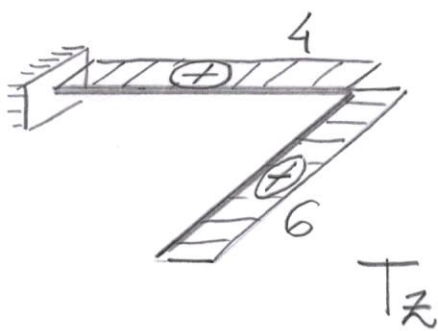
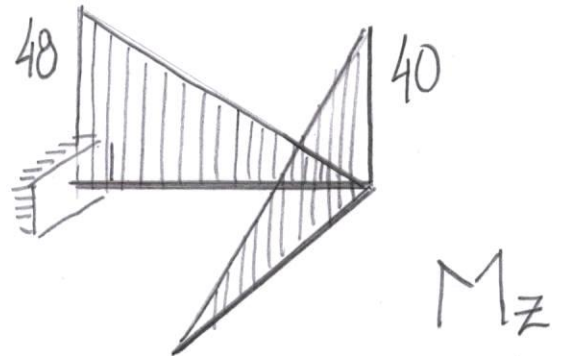
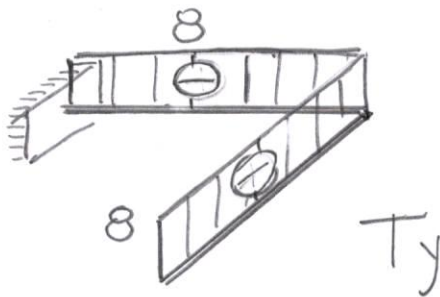
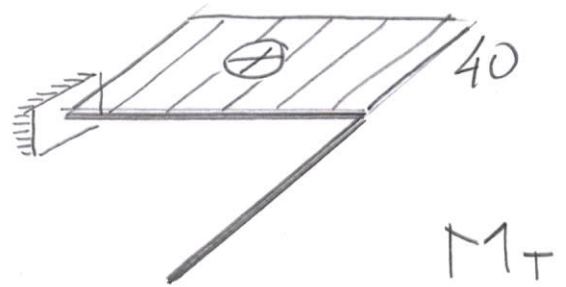
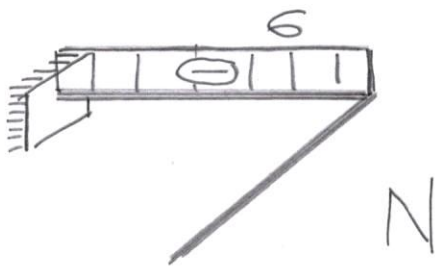
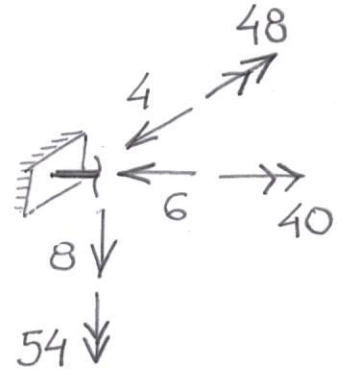
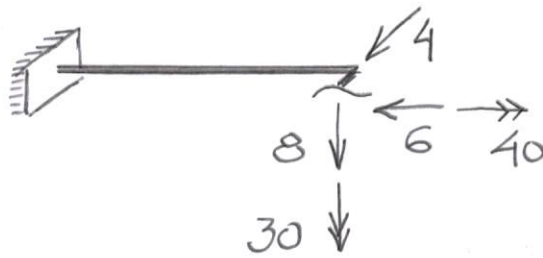
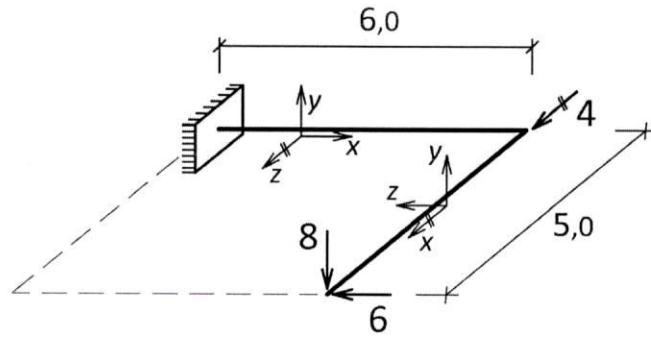


T

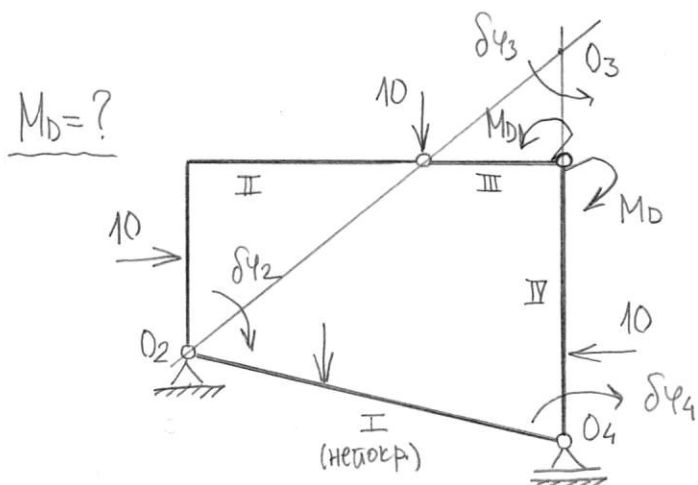
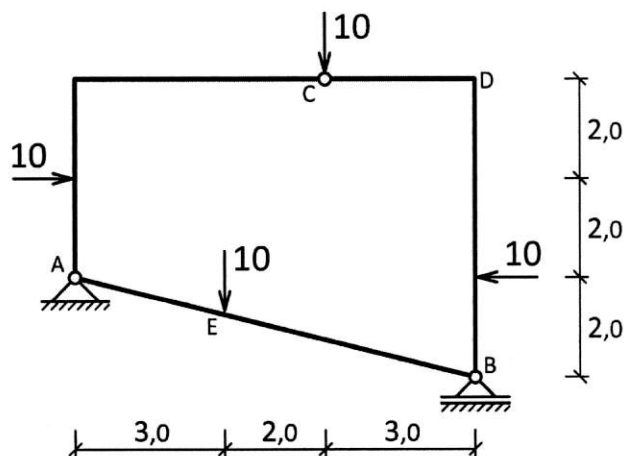


M

г)



3. ЗАДАТАК (22 %)



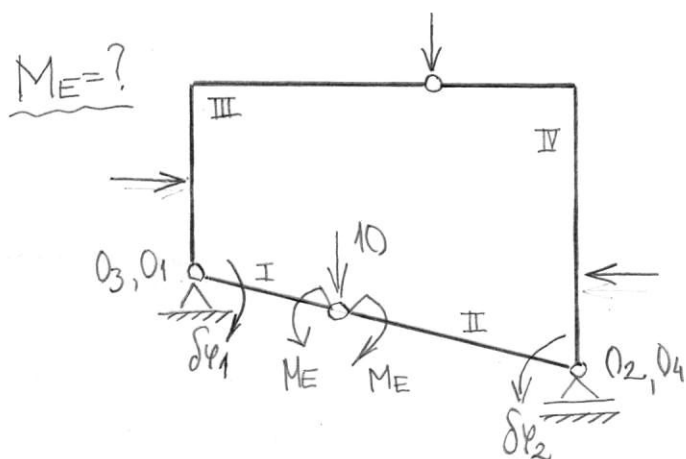
$$\delta \varphi_2 \cdot 5 = \delta \varphi_3 \cdot 3 \Rightarrow \delta \varphi_2 = \frac{3}{5} \delta \varphi_3$$

$$\delta \varphi_4 \cdot 6 = \delta \varphi_3 \cdot 2.4 \Rightarrow \delta \varphi_4 = \frac{2}{5} \delta \varphi_3$$

$$\delta A = 10 \cdot (2\delta \varphi_2) + 10 \cdot (5\delta \varphi_2) + M_D \cdot \delta \varphi_3 - M_D \cdot \delta \varphi_4 - 10 \cdot (2\delta \varphi_4) = 0$$

$$34 \delta \varphi_3 = -1.4 M_D \delta \varphi_3$$

$$\Rightarrow \boxed{M_D = -24.29}$$

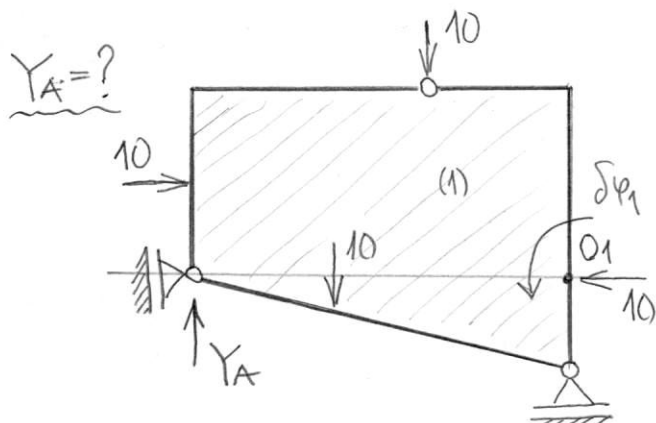


$$3\delta \varphi_1 = 5\delta \varphi_2 \Rightarrow \delta \varphi_2 = \frac{3}{5} \delta \varphi_1$$

$$\delta A = 10 \cdot (3\delta \varphi_1) - M_E \cdot \delta \varphi_1 - M_E \delta \varphi_2 = 0$$

$$30\delta \varphi_1 = 1.6 M_E \delta \varphi_1$$

$$\Rightarrow \boxed{M_E = 18.75}$$



$$\delta A = -Y_A \cdot (8\delta \varphi_1) + 10 \cdot (5\delta \varphi_1) -$$

$$-10 \cdot (2\delta \varphi_1) + 10 \cdot (3\delta \varphi_1) = 0$$

$$60\delta \varphi_1 = 8 Y_A \delta \varphi_1$$

$$\Rightarrow \boxed{Y_A = 7.5}$$