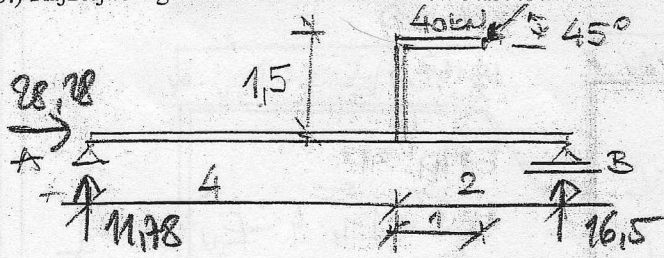
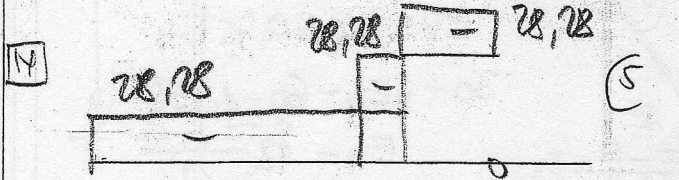


3.) Rajzolja meg a tartó részletesen kótázott belsőerő ábráit!

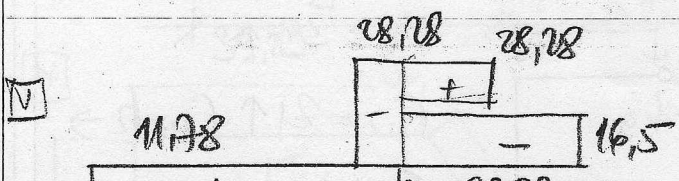


$$\sum \Pi_A = (28,28 \cdot 5 - 11,78 \cdot 28,28) / 6 = B_V = 16,5$$

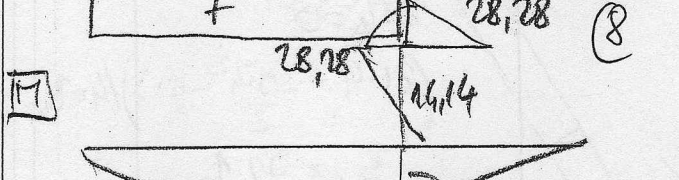
$$\sum \Pi_B = (28,28 \cdot 1 + 28,28 \cdot 1,5) / 6 = A_H = 11,78$$



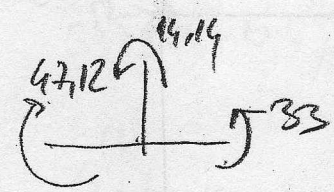
$$\Pi_1 = 28,28 \cdot 1 - 28,28 \cdot 1,5 = 14,14$$



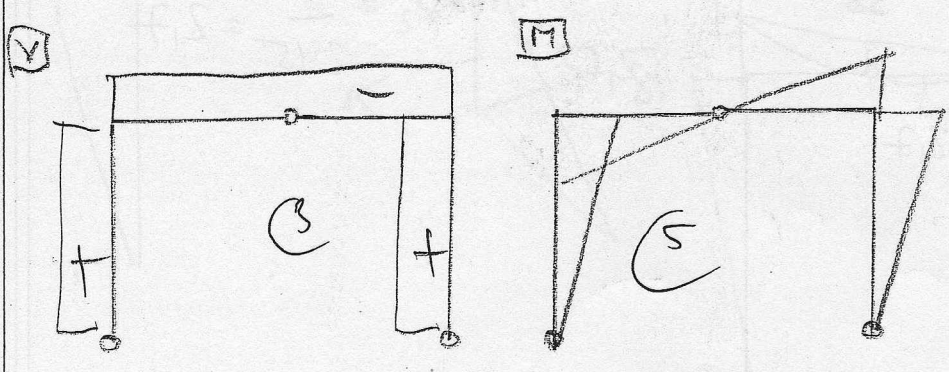
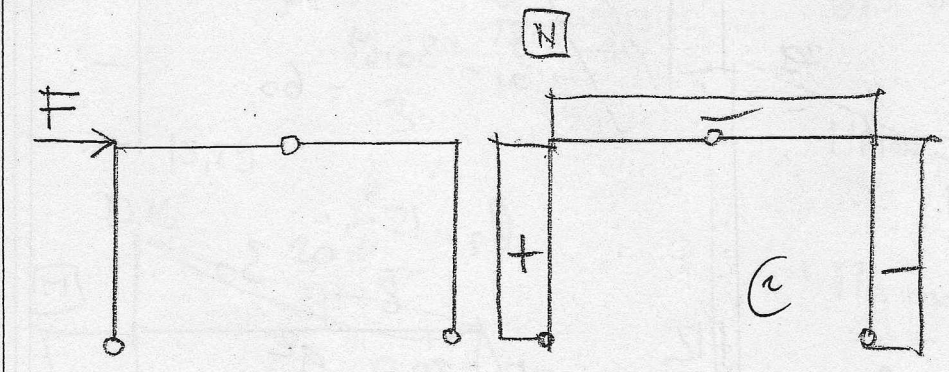
$$\Pi_2 = 16,5 \cdot 2 = 33$$



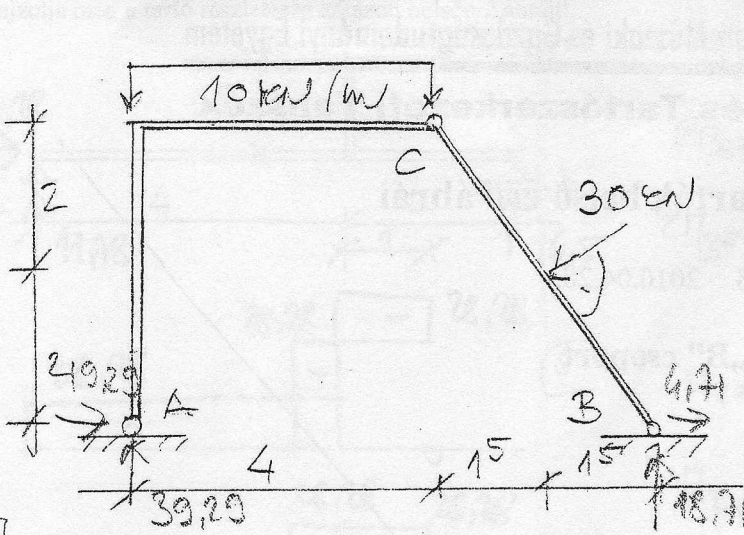
$$M_3 = 11,78 \cdot 4 = 47,12$$



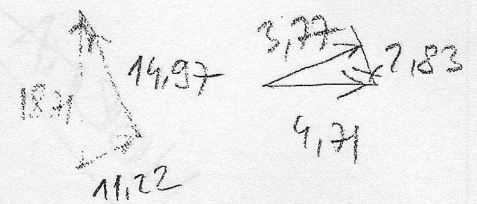
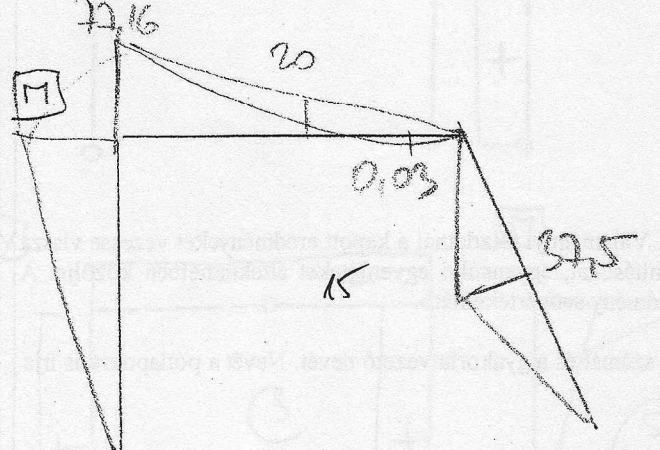
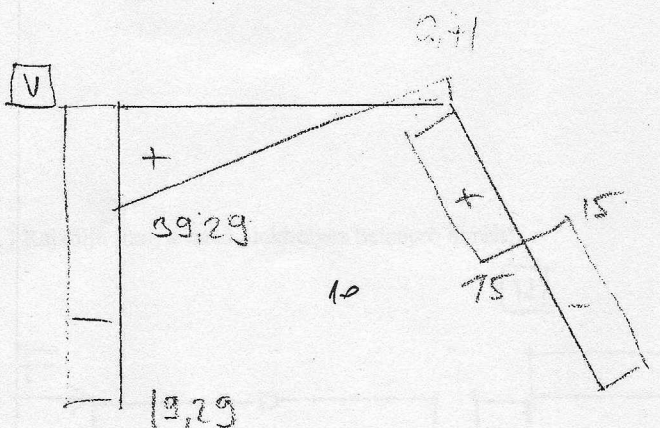
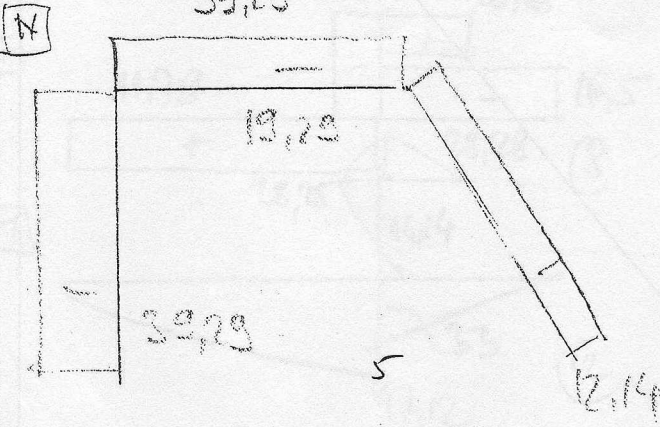
4.) Rajzolja meg a tartó alakhelyes belsőerő ábráit!



1. Rajzolja meg a tartó részletesen kótázott belsőerő ábráit!



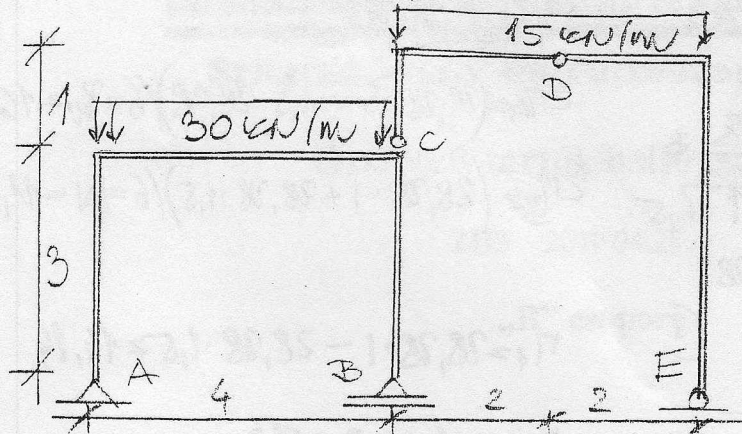
$\Sigma \mathcal{M}_A = 0$
 $(\frac{10 \cdot 4^2}{2} + 18 \cdot 5.5 - 24 \cdot 2) / 4 = B_V$
 $B_V = 18.71 \uparrow$
 $\Sigma \mathcal{M}_B = 0$
 $(10 \cdot 4 \cdot 5 + 30 \cdot 2.5) / 4 = A_V$
 $A_V = 39.29 \uparrow$
 $\Sigma \mathcal{M}_C = 0$
 $39.29 \cdot 4 - \frac{10 \cdot 4^2}{2} = 4 \cdot L_1 = 19.29$
 $\Sigma \mathcal{M}_2 = 0$
 $(18.71 \cdot 3 - 30 \cdot 2.5) / 4 = 4.71$



$B_1 = \frac{10 \cdot 4^2}{8} = 20$
 $M_{max1} = \frac{30 \cdot 5^2}{4} = 37.5$
 $M_{max2} = \frac{0.21^2}{2 \cdot 10} = 0.03$

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- 2.) a.) Rajzolja meg az adott tartó elkülönített szerkezeti ábráját, tüntesse fel a támasz és csuklóerőket!
 b.) Rajzolja meg a részletesen kótázott belsőerő ábrákat



$$\sum M_C = 0$$

$$\frac{15 \cdot 4^2}{2} + E_H \cdot 3 - E_V \cdot 4 = 0$$

$$\sum M_D = 0$$

$$\frac{15 \cdot 2^2}{2} + E_H \cdot 4 - E_V \cdot 2 = 0$$

$$E_V = 30 + 0,75 E_H$$

$$30 + 4 E_H - 60 - 1,5 E_H = 0$$

$$E_H = 12$$

$$E_V = 39 \uparrow$$

$$C_V = 21 \uparrow \quad C_H = 12 \rightarrow$$

$$\sum M_A = 0$$

$$\left(21 \cdot 4 + 30 \cdot 4^2 - 12 \cdot 3 \right) / 4 = B_V$$

$$B_V = 72 \uparrow$$

$$\sum M_B = 0$$

$$\left(30 \cdot 4^2 + 12 \cdot 3 \right) / 4 = L_V = 69 \uparrow$$

$$M_{max1} = \frac{57^2}{2 \cdot 30} = 43,35$$

$$b_1 = \frac{30 \cdot 4^2}{8} = 60$$

$$b_2 = \frac{15 \cdot 4^2}{8} = 30$$

$$M_{max2} = \frac{9^2}{2 \cdot 15} = 2,7$$

