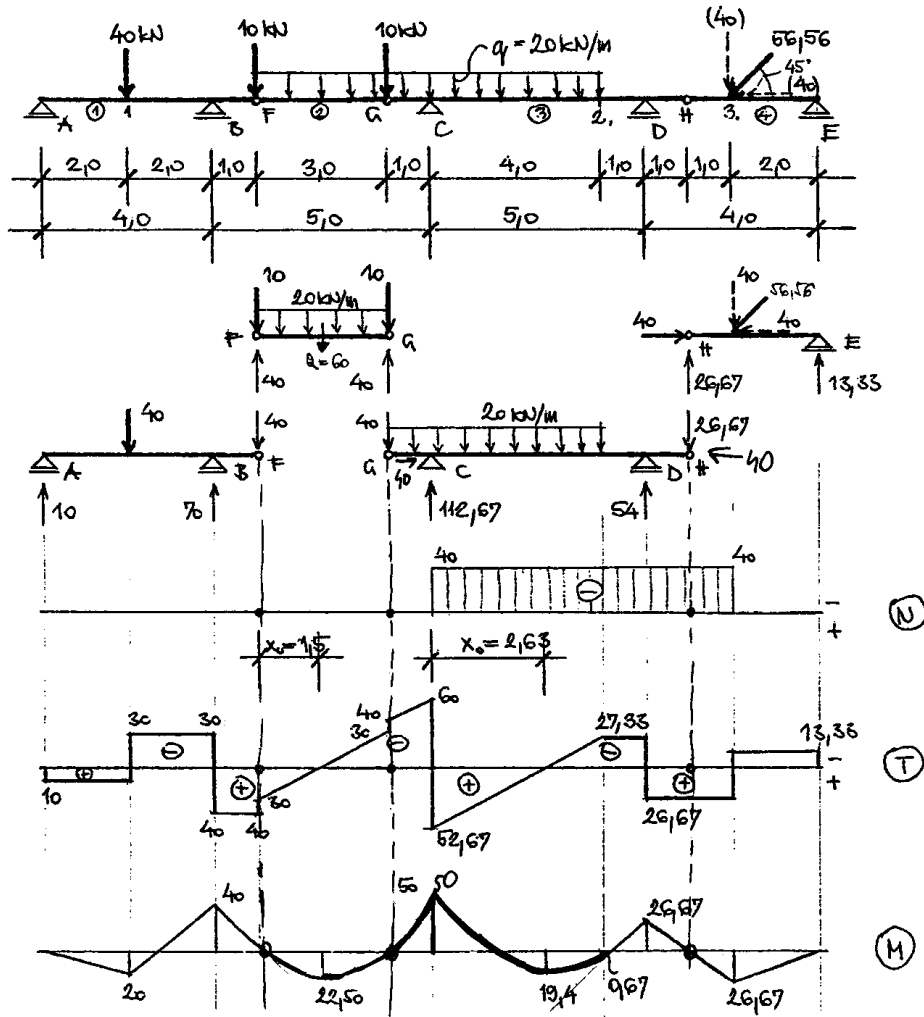


VI./4.

Gerber - tartó



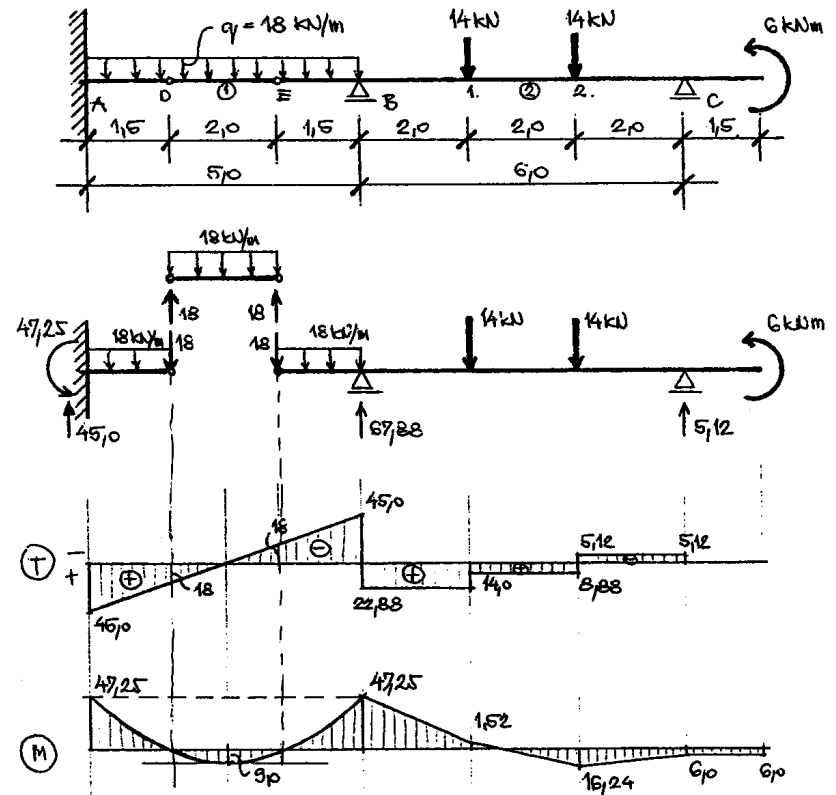
$$+M_{2max} = \frac{20 \cdot 3,0^2}{8} = 22,50 \text{ kNm}$$

$$+M_{3max} = M_c + \frac{(T_c)^2}{2q} = -50 + \frac{52,67^2}{40} = 19,40 \text{ kNm}$$

$$M_4 = +M_{4max} = 26,67 \cdot 1,0 = 26,67 \text{ kNm}$$

VI./5.

Gerber - tartó



$$B = \frac{18 \cdot 7,5 + 18 \cdot 1,5 \cdot 6,75 + 14(4,0 + 2,0) + 6}{6,0} = 67,88 \text{ kN} (\uparrow)$$

$$C = 18 + 18 \cdot 1,5 + 2 \cdot 14 - 67,88 = 5,12 \text{ kN} (\uparrow)$$

$$M_A = -18 \cdot 1,5 - 18 \cdot 1,5 \cdot 0,75 = -47,25 \text{ kNm}$$

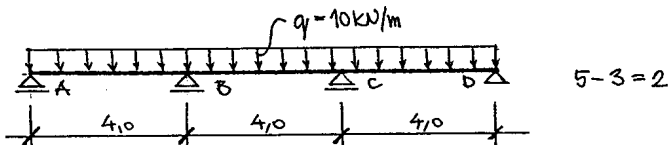
$$+M_{1max} = \frac{18 \cdot 2,0^2}{8} = 9,0 \text{ kNm}$$

$$M_1^{jobb} = 6 \cdot 5,12 \cdot 4,0 - 14 \cdot 2,0 = -1,52 \text{ kNm}$$

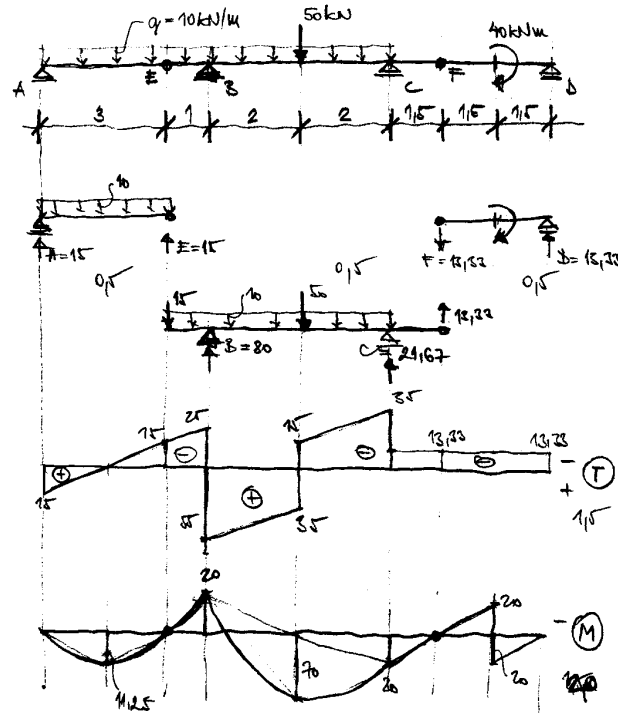
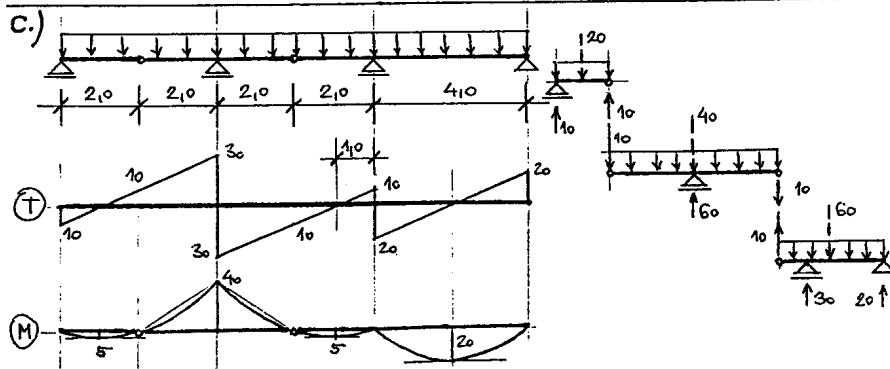
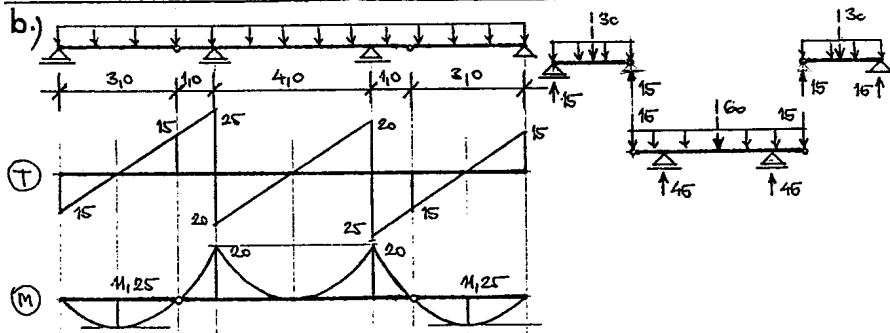
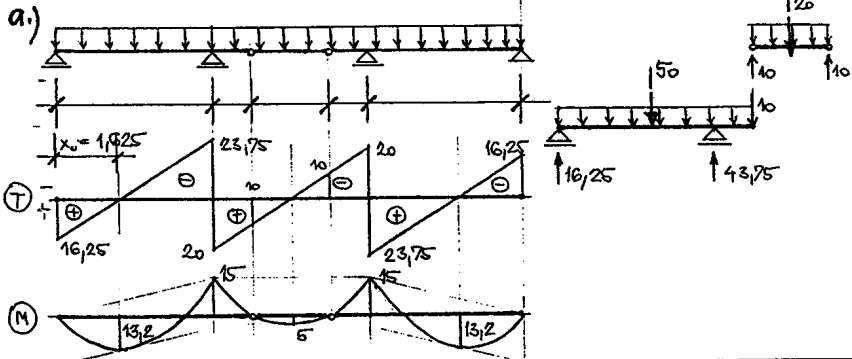
$$M_2 = 6 + 5,12 \cdot 2,0 = 16,24 \text{ kNm} = +M_{2max}$$

$$M_c = 6,0 \text{ kNm}$$

VI./6. Gerber-tartó



Helyezzük el a szükséges számú belső csatlókat fölöfelé módon, hasonlítsuk össze a T' és M' ábrákat!



$$\sum M_k = 0 = -1 \cdot 15 - 1 \cdot 10 \cdot 0.5 + 4 \cdot 10 \cdot 2 + 2 \cdot 50 - 5 \cdot 15.33 - 40$$

$$= -15 - 5 + 80 + 100 - 76.65 - 40$$

$$= -93.35 + 180 = \frac{86.65}{4}$$

$$C = 21.67 \text{ kN} (\uparrow)$$

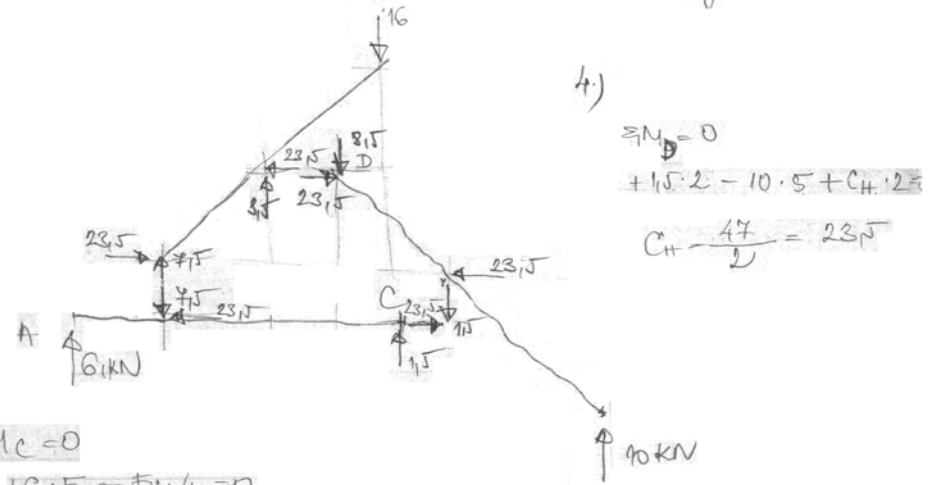
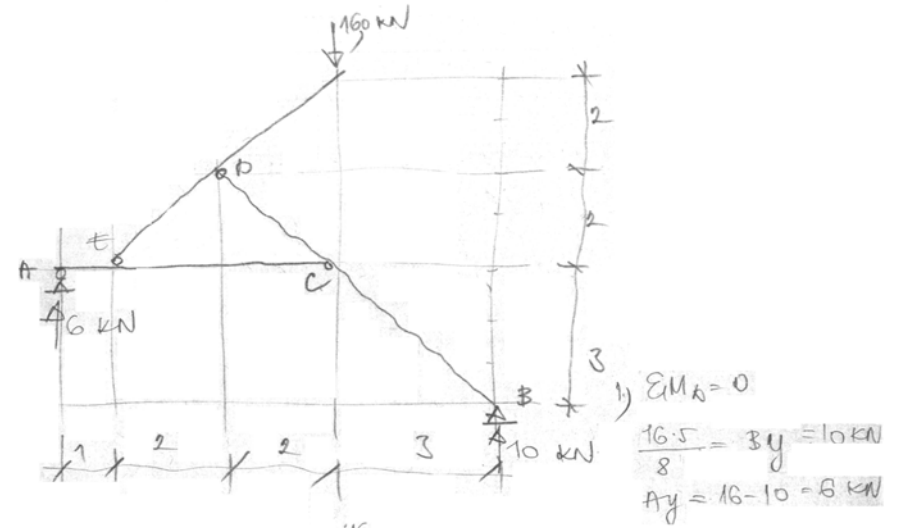
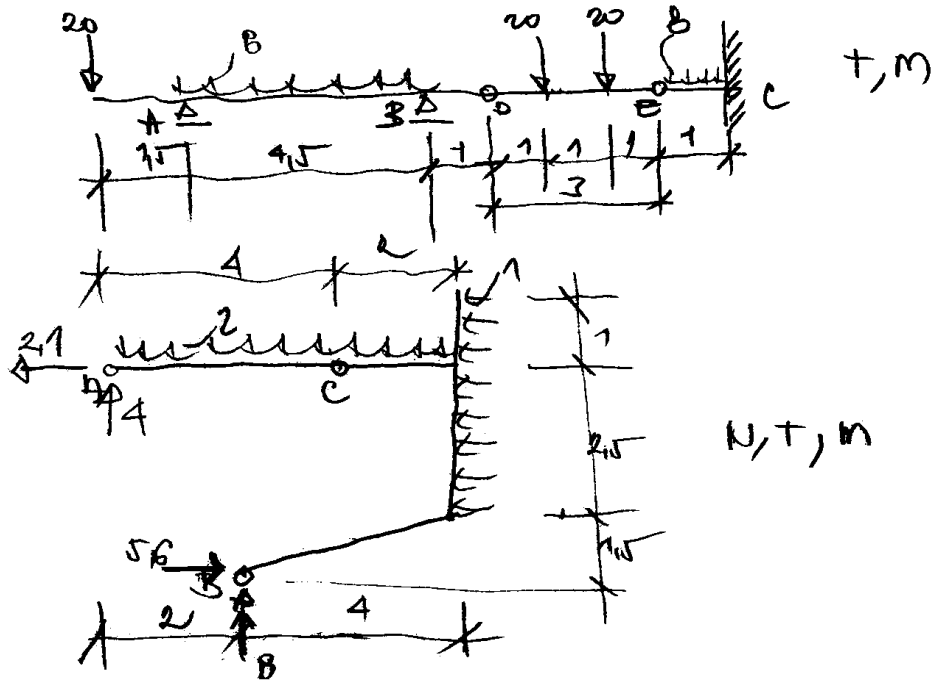
$$\sum F_y = 0 = 15 + 50 + 50 - 15.33 - 21.67$$

$$B_y = 80 \text{ kN} (\uparrow)$$

$$M_A = \frac{15 \cdot 15}{2} - \frac{15 \cdot 10 \cdot 0.75}{2} = 22.5 - 11.25 = 11.25$$

$$M_B = \frac{1 \cdot 15}{1} - \frac{1 \cdot 10 \cdot 0.5}{1} = 15 - 5 = 10$$

$$M_C = -15 \cdot 12.22 = -183.3$$



2)  $\sum M_C = 0$   
 $6 \cdot 5 - 10 \cdot 4 = 0$   
 $EV = 7.5$

3)  $-6 + 4.5 - CV = 0 \Rightarrow CV = 1.5$

4)  $\sum M_D = 0$   
 $+1.5 \cdot 2 - 10 \cdot 5 + C_H \cdot 2 = 0$   
 $C_H = \frac{47}{2} = 23.5$