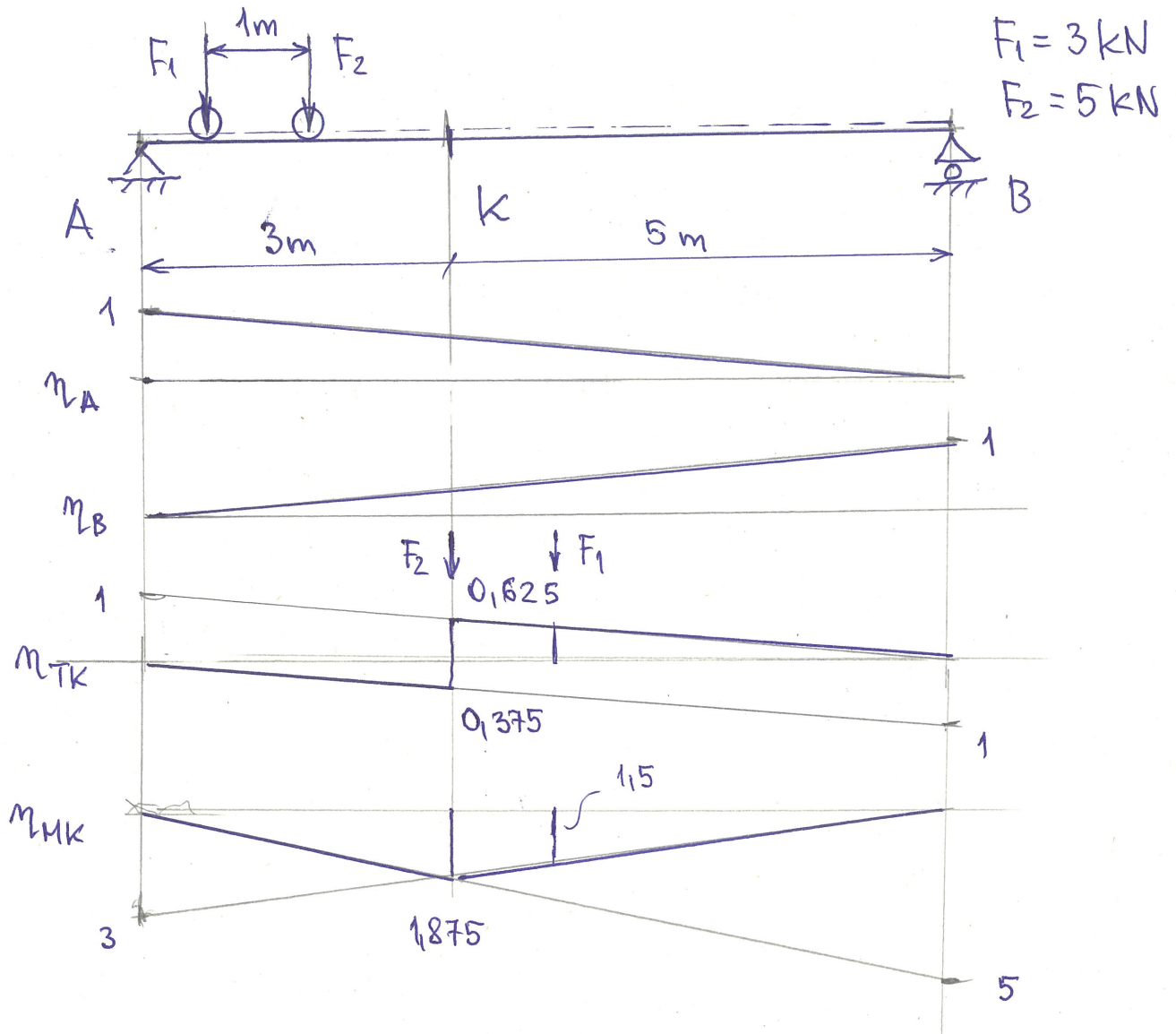


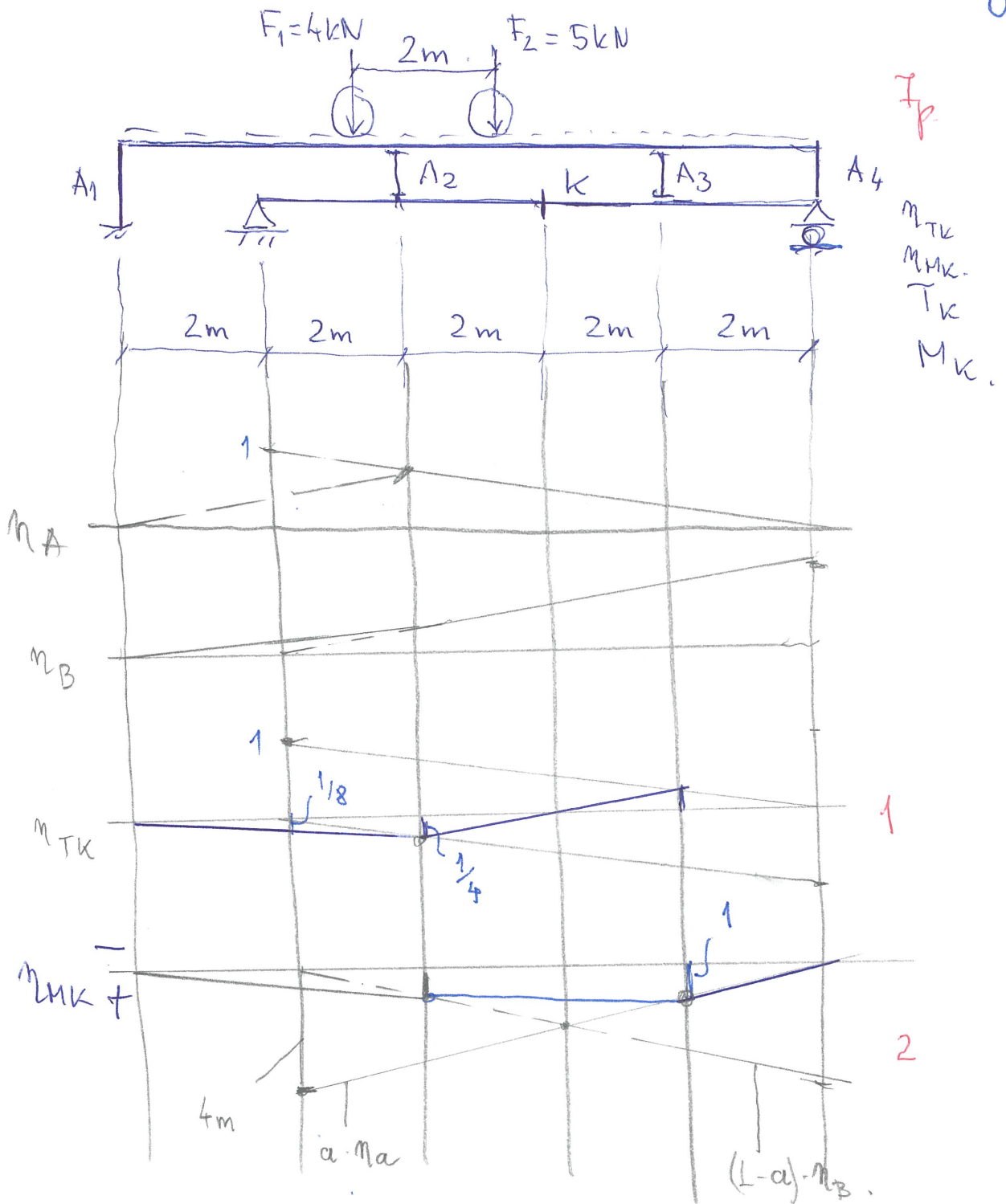
1. pl. Határozza meg a k keresztmetszet igénybevételeit (nyíróerő, hajlítónyomaték).



$$T_k = 5 \cdot 0,625 + 3 \cdot 0,5 = 4,625 \text{ kN}$$

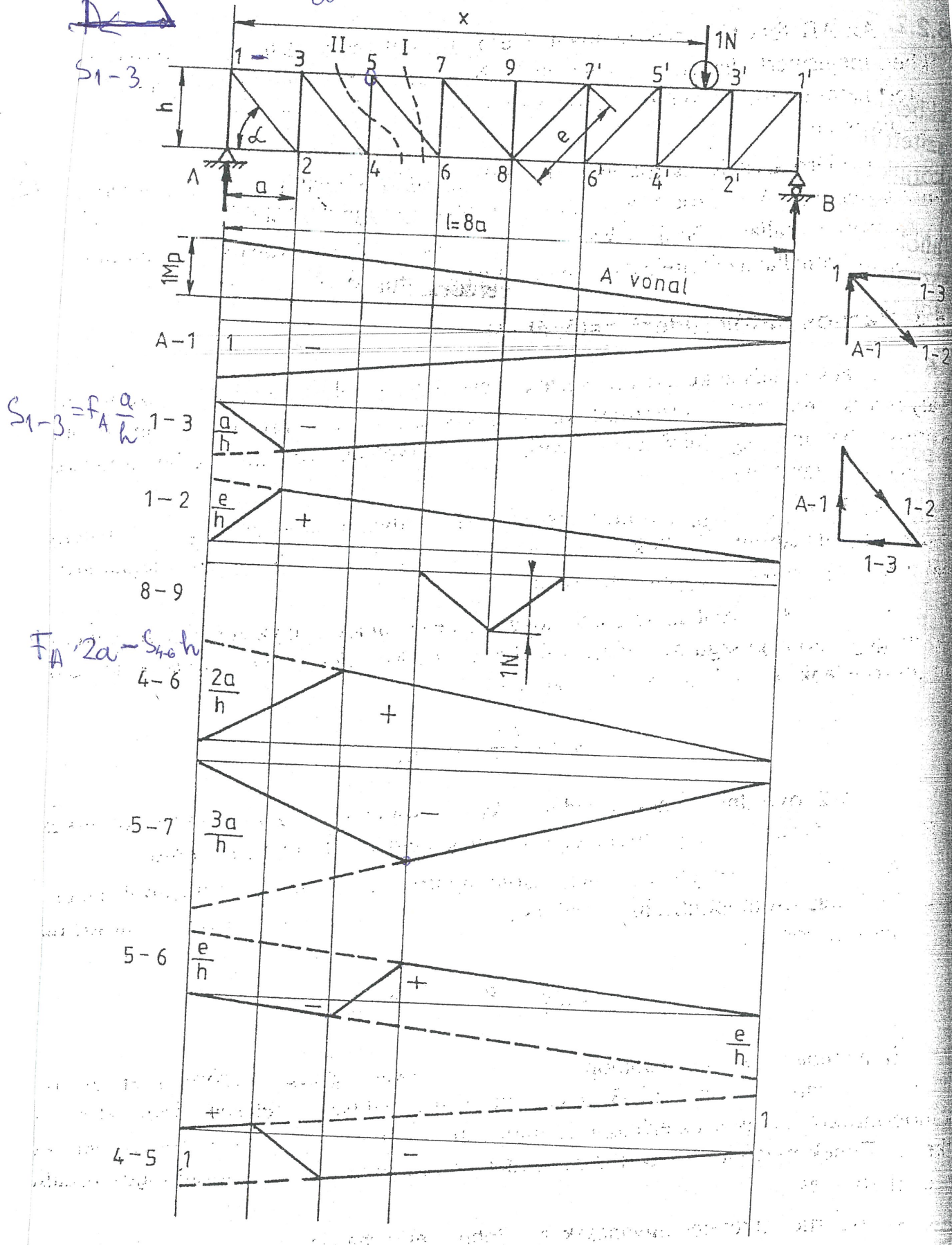
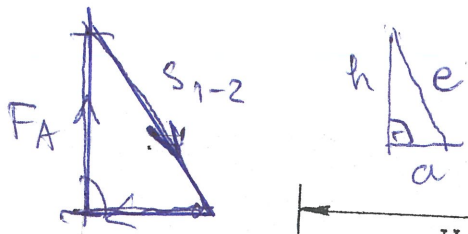
$$M_k = 5 \cdot 1,875 + 3 \cdot 1,5 = 13,875 \text{ kN}$$

2. pl.



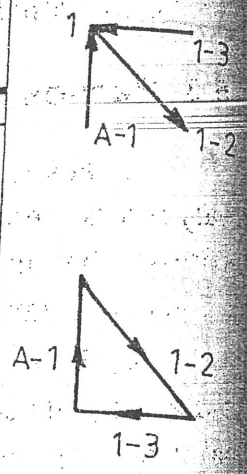
$$n_{TK} = \frac{1}{4} \quad ; \quad T_k = 5 \frac{1}{4} + 4 \frac{1}{8} = \frac{7}{4} = 1,75 \text{ kN}$$

$$n_{MK} = 1 \quad ; \quad M_k = 9 \text{ kNm}$$



$S_{1-3} = F_A \frac{a}{h}$

$F_A \frac{2a}{h} - S_{4-6} h$



$$\eta_1 = 1,5/2 = 0,75$$

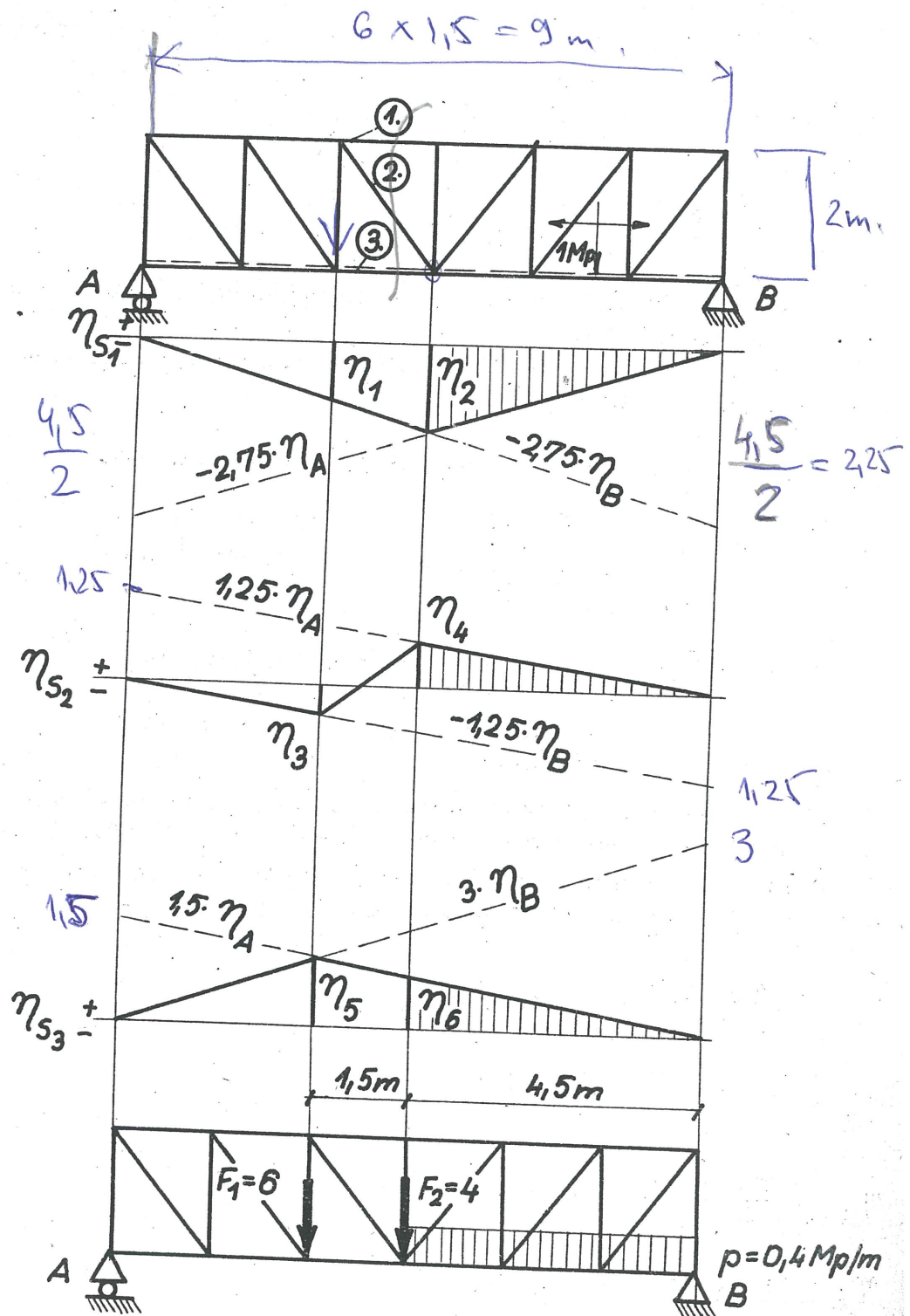
$$\eta_2 = 1,125$$

$$\eta_3 = 0,4166$$

$$\eta_4 = 0,625$$

$$\eta_5 = 1$$

$$\eta_6 = 0,75$$



4. 13. ábra

$$S_1 = \eta_1 \cdot F_1 + \eta_2 \cdot F_2 + \frac{1}{2} / \eta_2 \cdot 4,5 / p = - 12,24 \text{ I}$$

$$S_2 = \eta_3 \cdot F_1 + \eta_4 \cdot F_2 + \frac{1}{2} / \eta_4 \cdot 4,5 / p = + 1,78 \text{ M}$$

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$$S_3 = \eta_5 \cdot F_1 + \eta_6 \cdot F_2 + \frac{1}{2} (\eta_6 \cdot 4,5) \cdot p = 9,67$$

g/