

Remarks: See §2.2.1, pages 19 till 21
See §2.3, pages 24 till 26
See §2.6, pages 34 onwards

Answers:

- a. $F = 200 \text{ kN}$
b. $u = 3,5 \text{ mm}$ (to the right)

Explanation:

a. $N^{AB} = \frac{1}{2} F = \frac{(4 \text{ mm})(150 \times 10^3 \text{ N})}{6 \times 10^3 \text{ mm}} = +100 \text{ kN} \rightarrow F = 200 \text{ kN},$

b. $N^{AB} = +87,5 \text{ kN}$

$$u_B(\rightarrow) = \Delta \ell^{AB} = \frac{(87,5 \times 10^3 \text{ N})(6 \times 10^3 \text{ mm})}{150 \times 10^6 \text{ N}} = +3,5 \text{ mm}$$