

2. KONTROLNÍ TEST

opravný termín

Jméno a příjmení:

Skupina:

Datum: 2023

Vyřešte vnitřní síly nosníku.

$$F_d = 10 \text{ kN}$$

$$F_e = 20 \text{ kN}$$

$$q = 20 \text{ kN/m}$$

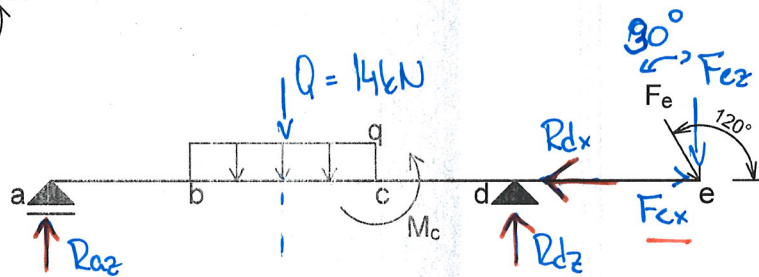
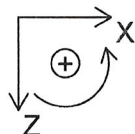
$$M_e = 20 \text{ kNm}$$

Řešení:

$$F_c = 14 \text{ kN}$$

$$q = 7 \text{ kN/m}$$

$$M_c = 28 \text{ kNm}$$



$$F_{cx} = 14 \cdot \sin 30 = 7 \text{ kN}$$

$$F_{cz} = 14 \cdot \cos 30 = 12,124 \text{ kN}$$

Reakce

$$R_{az} = 7,75 \text{ kN}$$

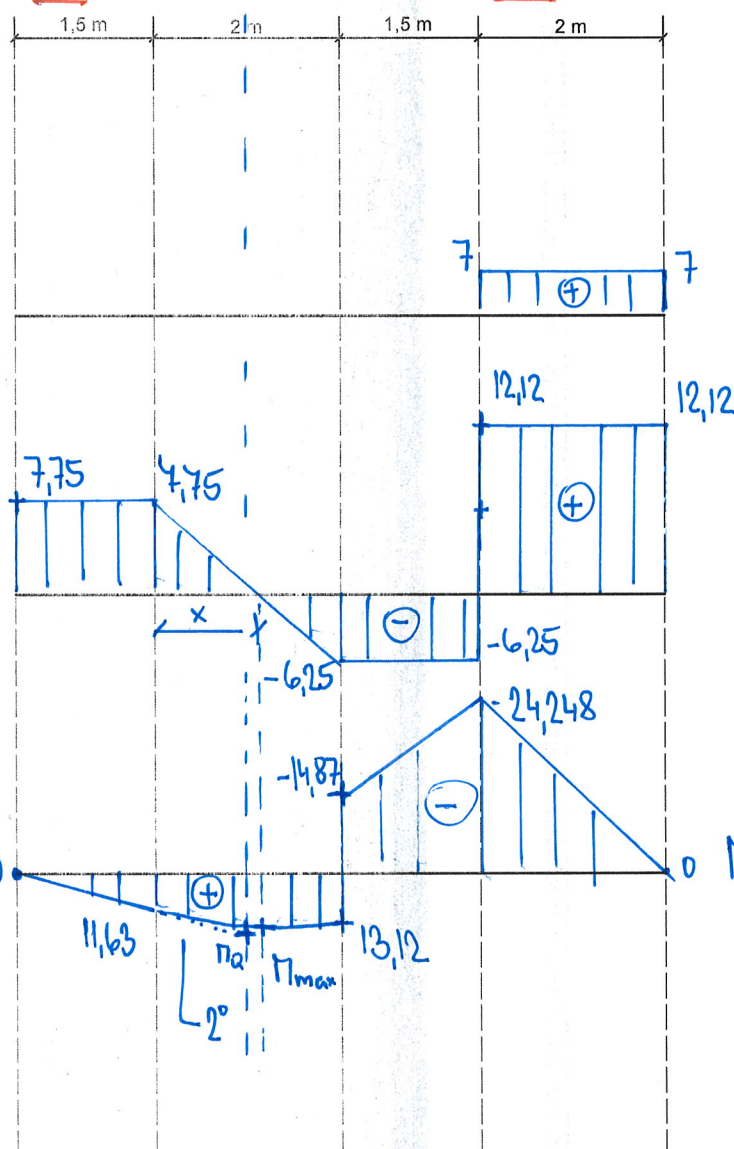
$$R_{dz} = 18,37 \text{ kN}$$

$$R_{dx} = 7 \text{ kN}$$

N

V

M



$$V(x) = 0: 7,75 - q \cdot x = 0$$

$$x = 1,107 \text{ m}$$

$$M_a = R_{az} \cdot 2,5 = 19,38 \text{ kNm}$$

$$M_{max} = R_{az}(1,5 + x) - \frac{1}{2}x \cdot (x \cdot q) = 15,92 \text{ kNm}$$