

$$M_B = \frac{-20 \frac{\text{kN}}{\text{m}} \cdot 4 \text{m}^2 / 8 \cdot 6,6 \text{m} - (3 \cdot 30 \text{kN} \cdot 5 \text{m} / 16) \cdot 5 \text{m}}{6,6 \text{m} + 5 \text{m}} + 0,429 \frac{15 \text{kNm}}{2}$$

$$= 31,69 \text{ kNm} \approx -31,7 \text{ kNm}$$

Sigamos con los cálculos estáticos siguientes

$$R_A = q_1 l_1 / 2 + M_B / l_1 = 20 \text{ kN/m} \cdot 4 \text{m} / 2 - 31,7 \text{ kNm} / 4 \text{m} \approx 32,08 \text{ kN} (32,1)$$

$$M_{T_1} = R_A^2 / (2q_1) = 32,1^2 \text{ (kN/m)}^2 / (2 \cdot 20 \text{ kN/m}) \approx 25,8 \text{ kNm}$$

$$l_{01} = 2R_A / q_1 = 2 \cdot 32,1 \text{ kN} / 20 \text{ kN/m} \approx 3,21 \text{m}; \quad x_{01} = \frac{l_{01}}{2}$$

$$Q_{Ad} = R_A; \quad Q_{B12} = Q_{Ad} - q_1 l_1 = 32,1 \text{ kN} - 20 \text{ kN/m} \cdot 4 \text{m} = -47,9 \text{ kN}$$

$$Q_{Bd} = P/2 - M_B / l_2 + M_C / l_2 = 30 \text{ kN} / 2 + 31,7 \text{ kNm} / 5 \text{m} - 15 \text{ kNm} / 5 \text{m} =$$

$$\approx 18,3 \text{ kN} = Q_{D12}; \quad Q_{Dd} = Q_{D12} - P = 18,3 \text{ kN} - 30 \text{ kN} = -11,7 \text{ kN}$$

$$M_{T_2} = Q_{Bd} \cdot a + M_B = 18,3 \text{ kN} \cdot 2,5 \text{m} - 31,7 \text{ kNm} = 14,05 \text{ kNm} (14,1)$$

$$Q_{C12} = Q_{Dd} = -11,7 \text{ kN}; \quad Q_{Cd} = 10 \text{ kN} = Q_{E12}$$

