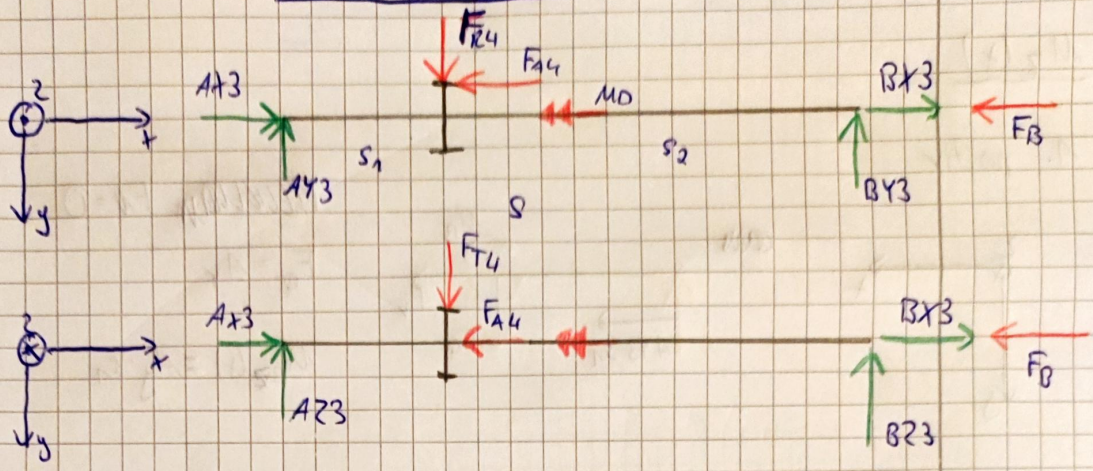
Abtriebswelle neu



$\circlearrowleft_{(A_{y3})}$: $F_{A4} \cdot \frac{d_4}{2} - F_{R4} \cdot s_1 + B_{Y3} \cdot s = 0$

$\Rightarrow B_{Y3} = \frac{-F_{A4} \cdot \frac{d_4}{2} + F_{R4} \cdot s_1}{s} = -1{,}24\ kN$

$\uparrow \quad B_{Y3} - F_{R4} + A_{Y3} = 0$

$A_{Y3} = F_{R4} - B_{Y3} = 3\ kN$

$\circlearrowleft_{(A_{Z3})}$: $-F_{T4} \cdot s_1 + B_{Z3} \cdot s = 0$

$\Rightarrow B_{Z3} = \frac{F_{T4} \cdot s_1}{s} = +2{,}14\ kN$

$\uparrow : A_{Z3} + B_{Z3} - F_{T4} = 0$

$\rightarrow A_{Z3} = F_{T4} - B_{Z3} = 2{,}4\ kN$

$A_{R3} = \sqrt{A_{Z3}^2 + A_{y3}^2} = 3{,}84\ kN$

$B_{R3} = \sqrt{B_{Z3}^2 + B_{y3}^2} = 2{,}47\ kN$

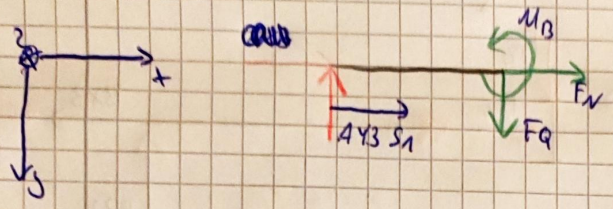
B ist Festlager aufgrund der überwiegend radialen Belastung

$B_r = F_{A4} + F_B = 4{,}65\ kN$

Schnittgrößen

$M_z(x)$

1. positiv

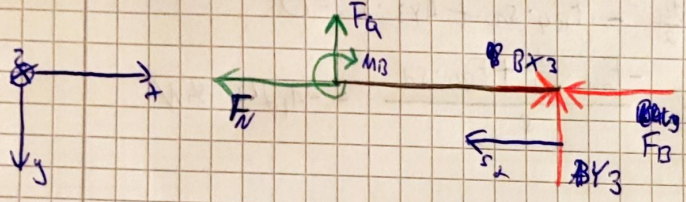


$F_N = 0$

$F_Q = A_Y$

$M_{Bz}(x) = A_y \cdot s_1$

2. negativ



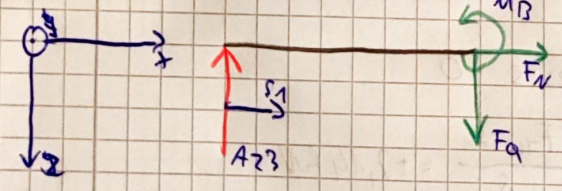
$F_N = +B_{+3} - F_B$

$F_Q = -B_{Y3}$

$M_{Bz}(4) = B_y \cdot s_2$

$M_y(x)$

1. positiv

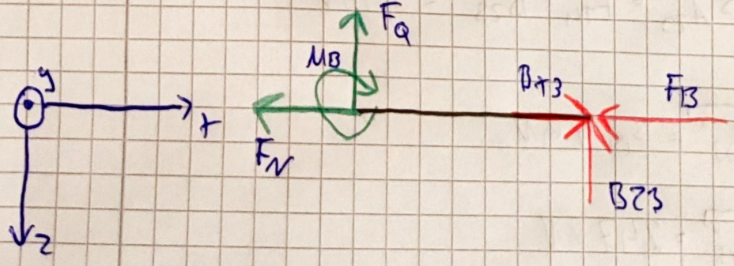


$F_N = 0$

$F_Q = A_z$

$M_B = A_z \cdot s_1$

2. negativ



$F_N = B_{+3} - F_B$

$F_Q = -B_{Z3}$

$M_B = B_{Z3} \cdot s_2$