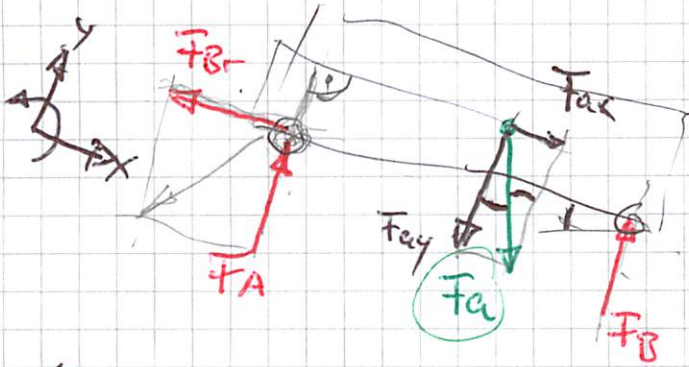


Aufg. 5.1

LJ PKW



$$\bar{F}_{cx} = F_c \cdot \sin \alpha$$

$$\bar{F}_{cy} = F_c \cdot \cos \alpha$$

$$\sum \bar{M}_A = 0 = -\bar{F}_{cy} \cdot l_1 - \bar{F}_{cx} \cdot l_5 + \bar{F}_B \cdot (l_1 + l_2 + l_3)$$

$$0 = -F_c \cdot \cos \alpha \cdot l_1 - F_c \cdot \sin \alpha \cdot l_5 + \bar{F}_B \cdot ( )$$

$$\bar{F}_B = \frac{F_c \cdot \cos \alpha \cdot l_1 + F_c \cdot \sin \alpha \cdot l_5}{l_1 + l_2 + l_3}$$

$$= \frac{13'000 \text{ N} \cdot \cos 17^\circ \cdot 1600 \text{ mm} + 13'000 \text{ N} \cdot \sin 17^\circ \cdot 600 \text{ mm}}{(1600 + 850 + 400) \text{ mm}}$$

$$= 7780 \text{ N} = 7,78 \text{ kN}$$

$$\uparrow \sum F_y = 0 = +F_A - \bar{F}_{cy} + F_B$$

$$\begin{aligned} \bar{F}_A &= \bar{F}_{cy} - F_B = 13 \text{ kN} \cdot \cos 17^\circ - 7,78 \text{ kN} \\ &= 4,65 \text{ kN} \end{aligned}$$

$$\rightarrow \sum F_x = 0 = -\bar{F}_{Bx} + \bar{F}_{cx}$$

$$\bar{F}_{Bx} = \bar{F}_{cx} = F_c \cdot \sin \alpha = 13 \text{ kN} \cdot \sin 17^\circ = 3,8 \text{ kN}$$

$$\bar{F}_{Ges} = \sqrt{\bar{F}_A^2 + \bar{F}_{Bx}^2}$$