

Lineare Gleichungssysteme:

Aufgabe c)

$$\alpha := 30.96^\circ \quad f := 12000 \cdot N$$

Vorgabe

$$0 \cdot N = f_{ax} - f_k \cdot \cos(\alpha)$$

$$0 \cdot N = f_{ay} + f_k \cdot \sin(\alpha) - f$$

$$0 \cdot N \cdot m = f \cdot 500 - f_k \cdot \sin(\alpha) \cdot 300 - f_k \cdot \cos(\alpha) \cdot 100$$

$$\begin{pmatrix} f_{ax} \\ f_{ay} \\ f_k \end{pmatrix} := \text{Suchen}(f_{ax}, f_{ay}, f_k) \rightarrow \begin{pmatrix} \frac{60000.0 \cdot N \cdot \cos(30.96^\circ)}{\cos(30.96^\circ) + 3.0 \cdot \sin(30.96^\circ)} \\ \frac{12000.0 \cdot N \cdot \cos(30.96^\circ) - 24000.0 \cdot N \cdot \sin(30.96^\circ)}{\cos(30.96^\circ) + 3.0 \cdot \sin(30.96^\circ)} \\ \frac{60000.0 \cdot N}{\cos(30.96^\circ) + 3.0 \cdot \sin(30.96^\circ)} \end{pmatrix}$$

$$f_{ax} = 21430.619 \text{ N}$$

$$f_{ay} = -856.46 \text{ N}$$

$$f_k = 24991.198 \text{ N}$$