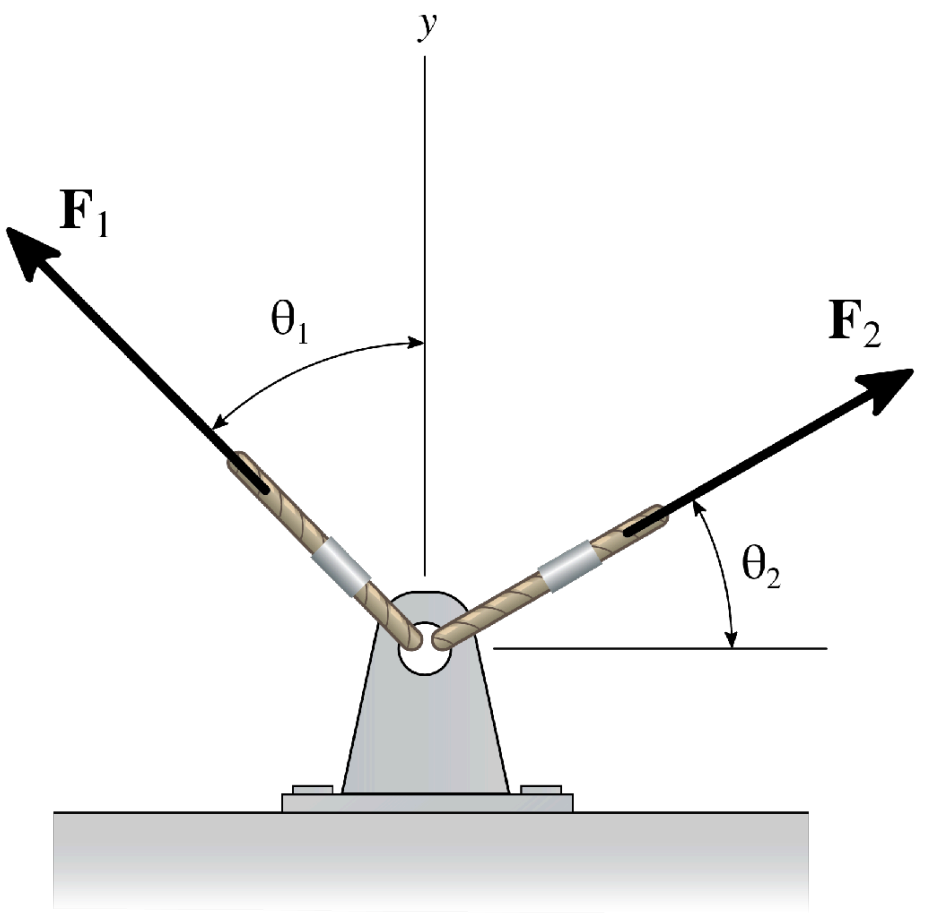

Two forces $\vec{F_1}$ and $\vec{F_2}$ act on the metal bearing fixed to the surface. If the resultant force $\vec{F_R}$ is directed along the positive y axis and $\vec{F_1}$ has a magnitude of F_1, find the magnitudes of $\vec{F_2}$ and the resultant force $\vec{F_R}$.

Using Sine Law:

$$\frac{F_1}{\sin(90° - \theta_2)} = \frac{F_2}{\sin(\theta_1)}$$

$$\Rightarrow F_2 = F_1 \cdot \frac{\sin(\theta_1)}{\sin(90° - \theta_2)}$$

$$\frac{F_1}{\sin(90^\circ - \theta_2)} = \frac{F_R}{\sin(90^\circ - \theta_1 + \theta_2)}$$

$$\Rightarrow F_R = F_1 \cdot \frac{\sin(90^\circ - \theta_1 + \theta_2)}{\sin(90^\circ - \theta_2)}$$