



A force with magnitude F is supported by a frame. Identify the force as components acting along members AB and AC , and calculate the magnitude of each component.

Using sine law:

$$\frac{F}{\sin(\theta_2)} = \frac{F_{AB}}{\sin(180 - \theta_1 - \theta_2)}$$

$$\Rightarrow F_{AB} = F \cdot \frac{\sin(180 - \theta_1 - \theta_2)}{\sin(\theta_2)}$$

$$\frac{F}{\sin(\theta_2)} = \frac{F_{AC}}{\sin(\theta_1)}$$

$$\Rightarrow F_{AC} = F \cdot \frac{\sin(\theta_1)}{\sin(\theta_2)}$$