

$$\begin{array}{|c|} \hline F = 6.5 \text{ kN} \\ \hline \angle \theta = 12^\circ \\ \hline \end{array}$$

sc

Given

$$F = 6.5 \text{ kN}$$

To find

Express  $F$  as a vector  
solution

$$\begin{aligned} \vec{F} &= F_x \mathbf{i} + F_y \mathbf{j} \\ &= -F \cos \theta \mathbf{i} - F \sin \theta \mathbf{j} \end{aligned}$$

$$\tan \theta = \frac{5}{12}$$

$$\theta = \tan^{-1} 5/12 = 22.62^\circ$$

$$\begin{aligned} \therefore \vec{F} &= -6.5 \times \cos 22.62 \mathbf{i} - 6.5 \times \sin 22.62 \mathbf{j} \\ &= -6.0 \mathbf{i} - 2.5 \mathbf{j} \text{ kN} \end{aligned}$$