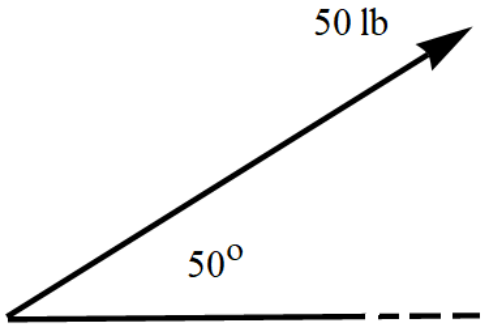
Exercise 33

A force of 50 lb is directed 50°above horizontal, pointing to the right. Determine its horizontal and vertical components. Display all results in a figure.

Solution



Let F_x and F_y be the horizontal and vertical components of the force, respectively. Then

$$\cos 50^\circ = \frac{F_x}{50}$$
$$\sin 50^\circ = \frac{F_y}{50}.$$

Solve for the components.

$$F_x = 50 \cos 50^\circ \approx 32.1 \text{ lb}$$
$$F_y = 50 \sin 50^\circ \approx 38.3 \text{ lb}$$