I can define a vector and represent vectors in multiple forms.

What is the difference between a scalar and a vector?

**Components of a Vector**

- **Dist = 6 blocks**

**Signs of Component Vectors**

- Right triangle:
  - $c^2 = a^2 + b^2$
  - $\sin \theta = \frac{a}{c}$
  - $\cos \theta = \frac{b}{c}$
  - $\tan \theta = \frac{a}{b}$

- Signs of component vectors:
  - $(-, +)$
  - $(+, +)$
  - $(-, -)$
  - $(+, -)$

- Vector $\vec{A}$ in component form: $(A_x, A_y)$

- Unit vector:
  - $\hat{\vec{A}_x}$
  - $\hat{\vec{A}_y}$
4.1 Vector Components

Vector Components

Find the x and y components of the following vector.

\[ \begin{align*}
\text{vector} & \quad \begin{array}{c}
\rightarrow \text{25 m @ 50° above x-axis}
\end{array} \\
\text{Component} & \quad \begin{array}{c}
\langle 16 \text{ m}, 19 \text{ m} \rangle
\end{array}
\end{align*} \]

\[ x = 25 \cos 50° \]
\[ x = 16 \text{ m} \]

\[ y = 25 \sin 50° \]

\[ y = 19 \text{ m} \]

Vector Components

Determine the resultant displacement for a person who walks from location...

A to C: \[ \text{______________} \]
J to K to F: \[ \text{______________} \]

Write the answers in vector notation and in component notation.

Homework

Worksheet