

1. Write the vector with initial point $(-4, 3)$ and terminal point $(-1, -7)$ in ...

- a. component form
- b. sum of unit vectors form

2. In what quadrant does the vector above lie when it is in standard position?

3. Given $\vec{v} = \langle 3, -5 \rangle$ and $\vec{w} = \langle -2, 6 \rangle$, find the following:

a. $\vec{v} + \vec{w}$

b. $\vec{w} - \vec{v}$

c. $-2\vec{v} + \frac{1}{2}\vec{w}$

4. Given $\vec{v} = \langle -3, \sqrt{5} \rangle$, find the following, to the nearest tenth: (3 points each)

a. the magnitude of \vec{v} : $\|\vec{v}\| = \underline{\hspace{2cm}}$

b. the direction of \vec{v} : $\theta = \underline{\hspace{2cm}}$

5. Given: $\|\vec{a}\| = 6$, $\|\vec{b}\| = 8$, and the angle between the vectors $\theta = 57^\circ$

a. Draw and label a parallelogram, including the given information and the resultant vector.

b. Find the magnitude of the resultant vector to the nearest tenth.

b. Find the measure of the angle between the resultant vector and \vec{a} to the nearest tenth.

6. Given: $\vec{w} = -2\vec{i} - 6\vec{j}$

a. Write the vector in components form.

b. Find the unit vector in the direction of \vec{w} . (No decimals in your answer!)