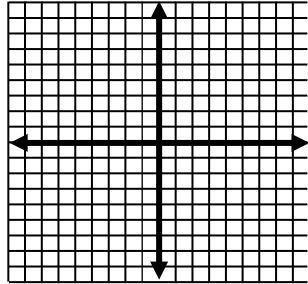


Show ALL work. Give final answers to 3 decimal places when necessary.

1. Find the component form of vector \mathbf{v} that has an initial point of $(-2, 1)$ and a terminal point of $(7, 6)$.

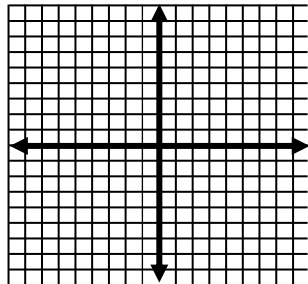


5. Given $\mathbf{v} = -2\mathbf{i} + 4\mathbf{j}$, find the magnitude of the vector.

2. Find the magnitude of \mathbf{v} :
 $\mathbf{v} = -\mathbf{i} - 4\mathbf{j}$.

6. An airplane tries to fly due north at 100 m/s but a wind is blowing from the west at 30 m/s. What is the plane's resultant velocity?

3. A vector \mathbf{v} has a magnitude of 6 and a direction angle of 135° . Find the component form of the vector.



7. An airplane has an airspeed of 600 mph and a heading of 200° . Write the plane's motion as a vector in component form.

4. Given $\mathbf{u} = 4\mathbf{i} - 3\mathbf{j}$ and $\mathbf{w} = \mathbf{i} - \mathbf{j}$, find $2\mathbf{u} + 3\mathbf{w}$.