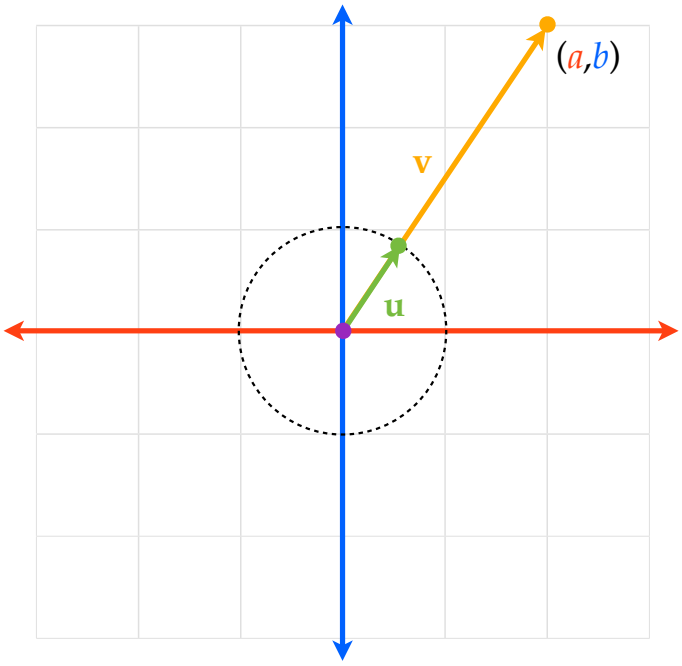
The Unit Vector in the Same Direction of $\mathbf{v} = a\mathbf{i} + b\mathbf{j}$

Name _____

Date _____ Period _____

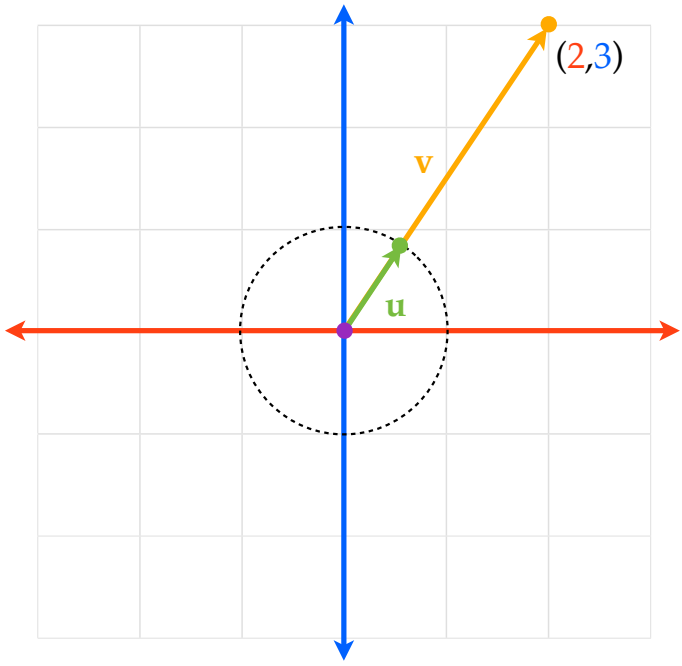
Given $\mathbf{v} = a\mathbf{i} + b\mathbf{j}$, the unit vector in the same direction of $\mathbf{v}$

$$\mathbf{u} = \frac{\mathbf{v}}{\|\mathbf{v}\|}$$



Find the unit vector in the direction of $\mathbf{v} = 2\mathbf{i} + 3\mathbf{j}$

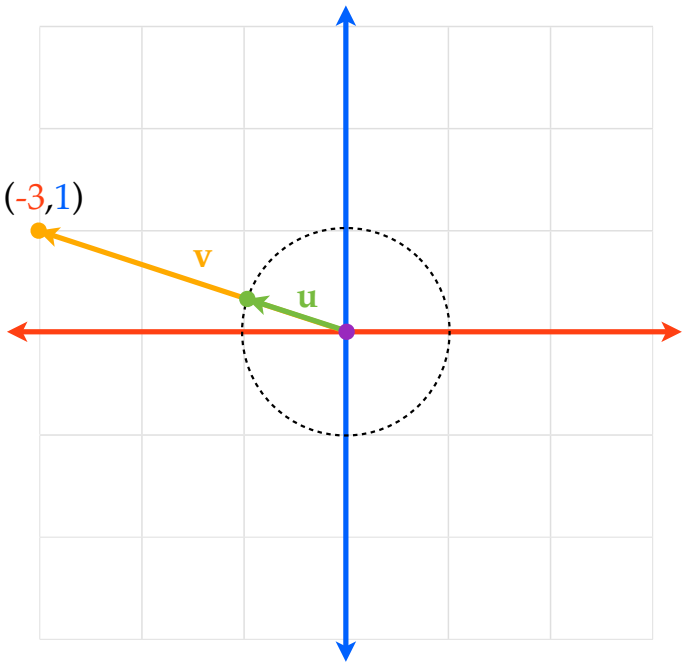
$$\mathbf{u} = \frac{\mathbf{v}}{\|\mathbf{v}\|}$$



Find the unit vector in the direction of

$\mathbf{v} = -3\mathbf{i} + \mathbf{j}$

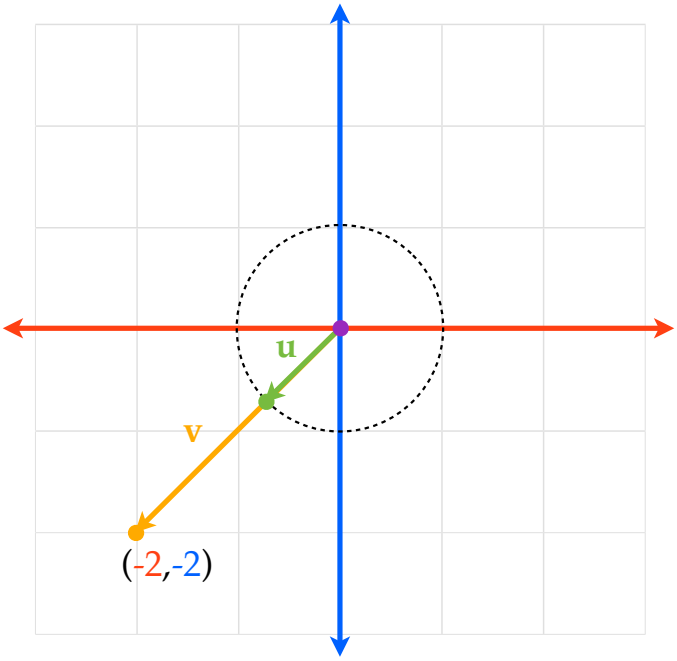
$$\mathbf{u} = \frac{\mathbf{v}}{\|\mathbf{v}\|}$$



Find the unit vector in the direction of

$\mathbf{v} = -2\mathbf{i} - 2\mathbf{j}$

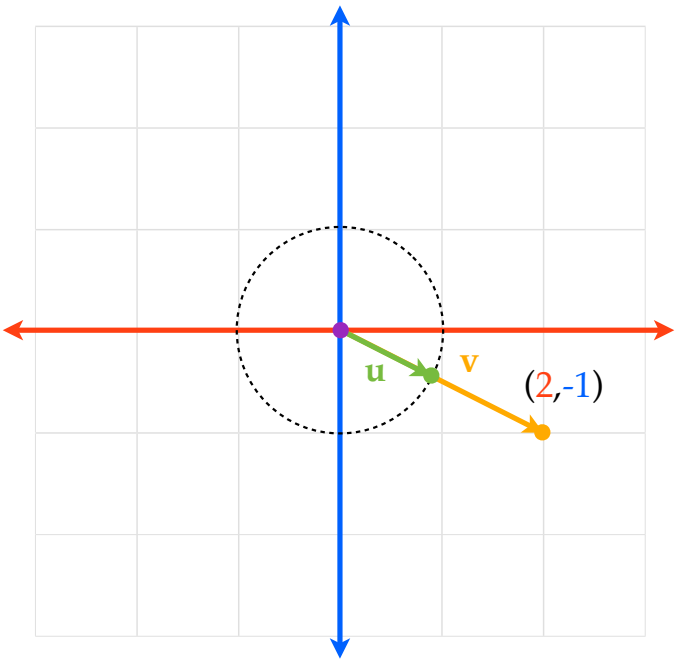
$$\mathbf{u} = \frac{\mathbf{v}}{\|\mathbf{v}\|}$$



Find the unit vector in the direction of

$\mathbf{v} = 2\mathbf{i} - \mathbf{j}$

$$\mathbf{u} = \frac{\mathbf{v}}{\|\mathbf{v}\|}$$



Given $\mathbf{v} = a\mathbf{i} + b\mathbf{j}$, the unit vector in the same direction of $\mathbf{v}$

$$\mathbf{u} = \frac{\mathbf{v}}{\|\mathbf{v}\|}$$

$$\mathbf{u} = \frac{a}{\|\mathbf{v}\|}\mathbf{i} + \frac{b}{\|\mathbf{v}\|}\mathbf{j}$$