

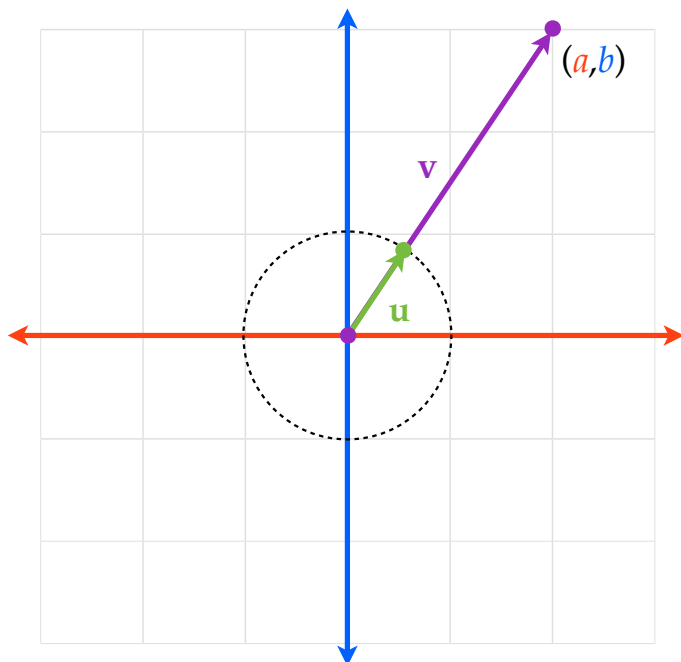
The Unit Vector in the Same Direction as $\mathbf{v} = \langle a, b \rangle$

Name _____

Date _____ Period _____

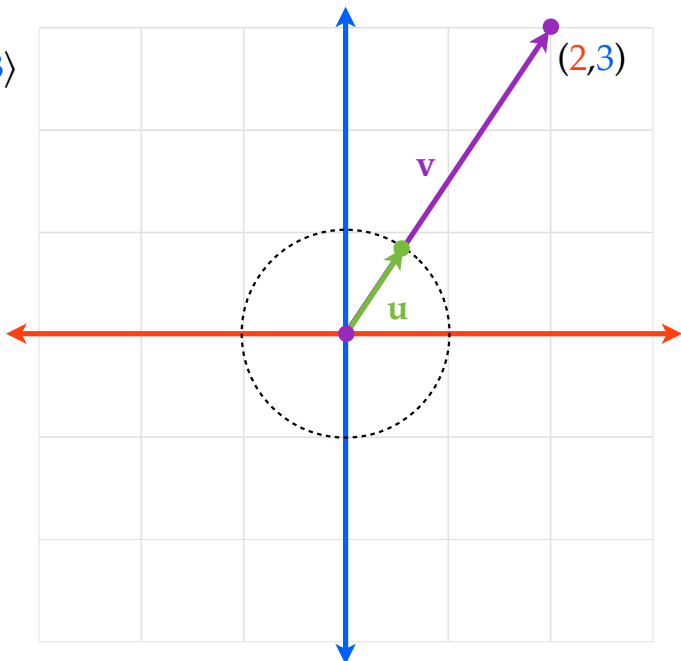
Given $\mathbf{v} = \langle a, b \rangle$, the unit vector in the same direction of \mathbf{v}

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



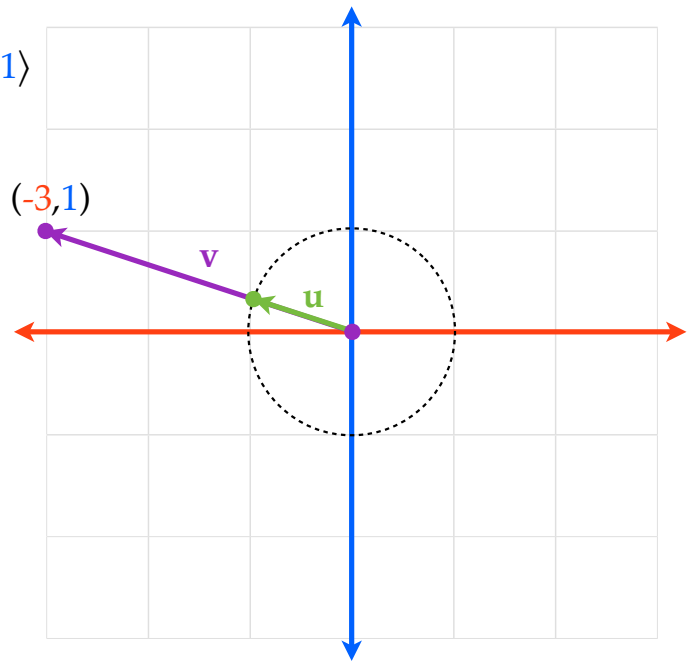
Find the unit vector in the direction of $\mathbf{v} = \langle 2, 3 \rangle$

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



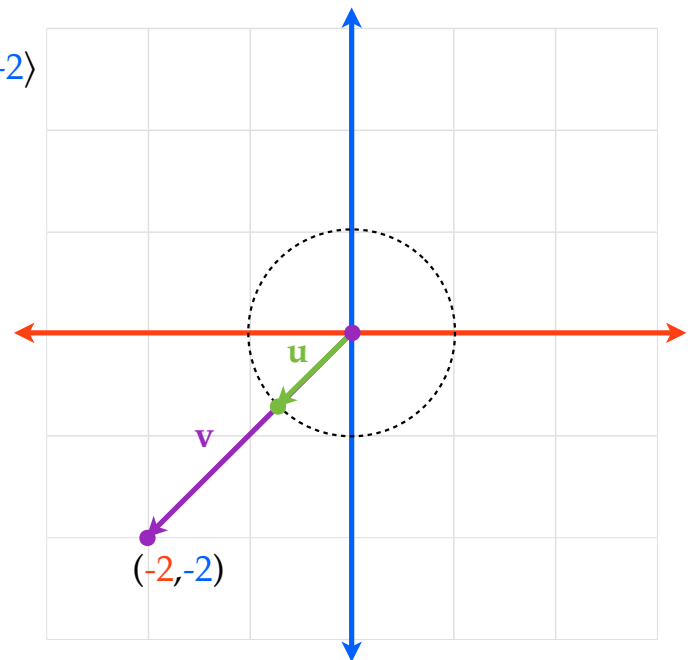
Find the **unit vector** in the direction of $\mathbf{v} = \langle -3, 1 \rangle$

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



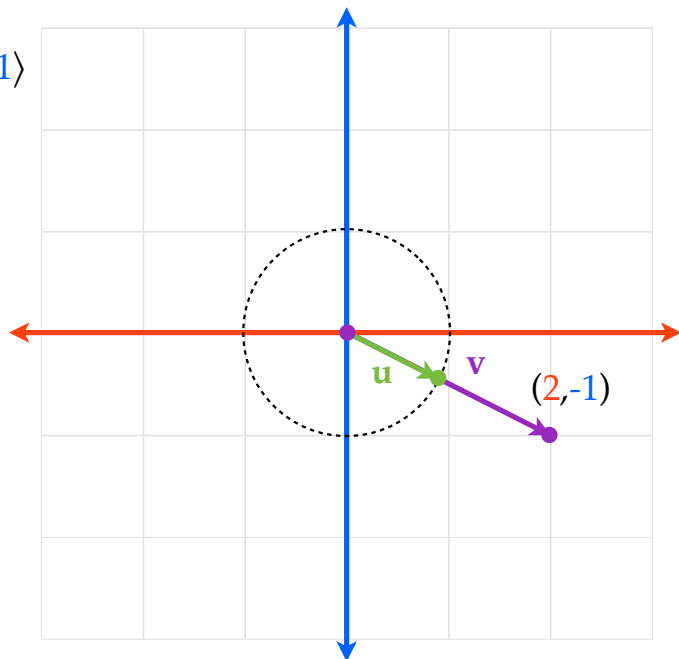
Find the **unit vector** in the direction of $\mathbf{v} = \langle -2, -2 \rangle$

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



Find the **unit vector** in the direction of $\mathbf{v} = \langle 2, -1 \rangle$

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



Given $\mathbf{v} = \langle a, b \rangle$, the **unit vector** in the direction of \mathbf{v}

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

$$\mathbf{u} = \left\langle \frac{a}{\|\mathbf{v}\|}, \frac{b}{\|\mathbf{v}\|} \right\rangle$$