Finding the Horizontal and Vertical Components of a Vector

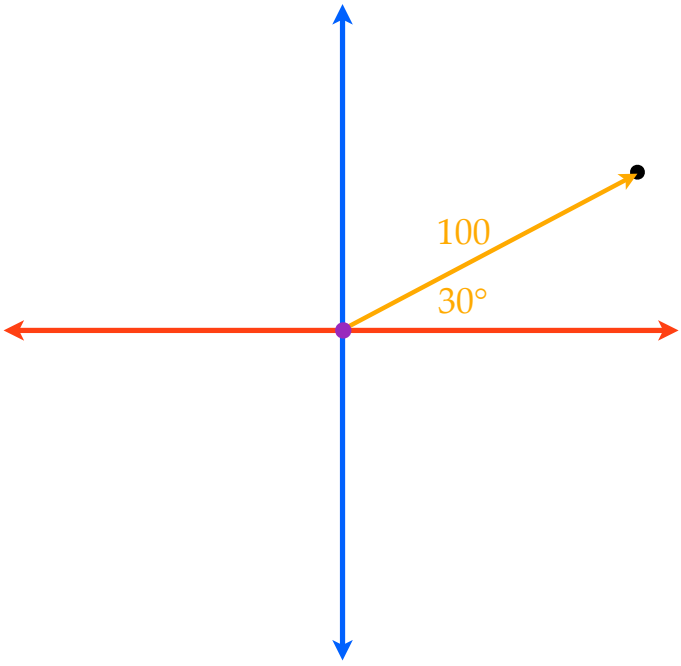
Name _____

Date _____ Period _____

Given $\|\mathbf{v}\|$ and direction of $\mathbf{v}$, θ , then...

$a = \|\mathbf{v}\| \cos\theta \qquad b = \|\mathbf{v}\| \sin\theta$

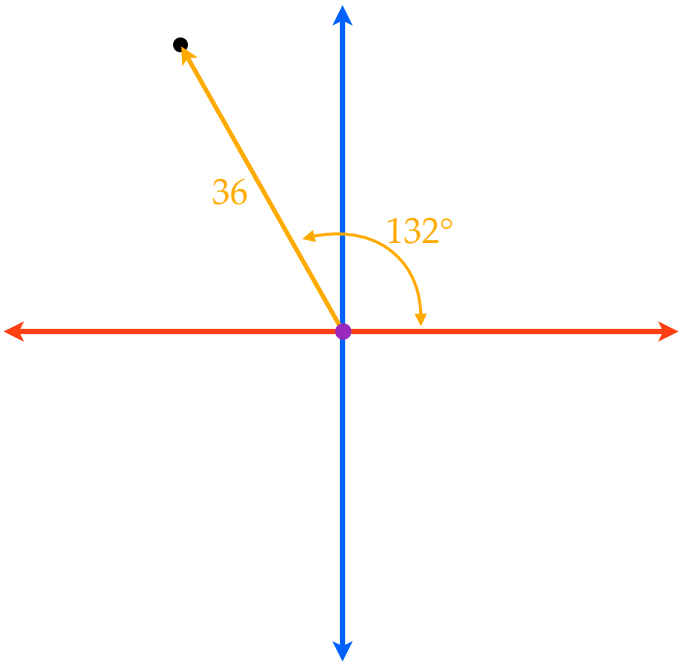
$\|\mathbf{v}\| = 100 \qquad \theta = 30°$



Given $\|\mathbf{v}\|$ and direction of $\mathbf{v}$, θ , then...

$a = \|\mathbf{v}\| \cos\theta \qquad b = \|\mathbf{v}\| \sin\theta$

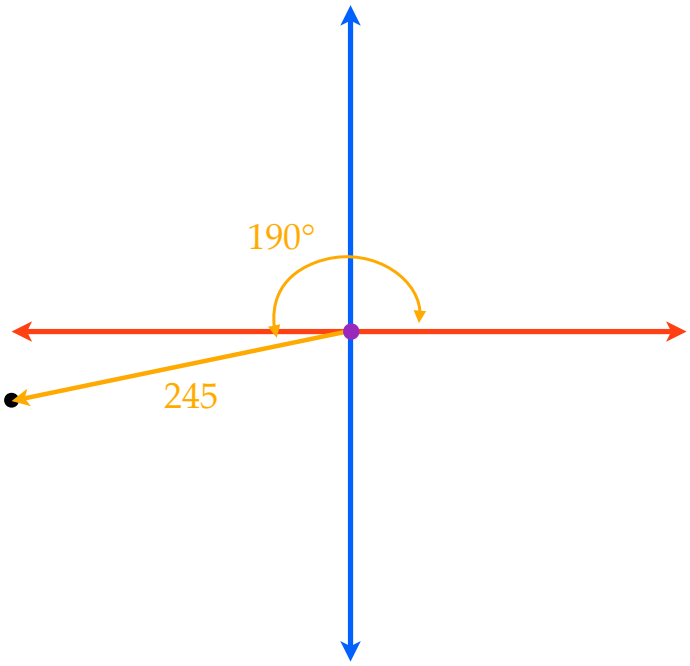
$\|\mathbf{v}\| = 36 \qquad \theta = 132°$



Given $\|\mathbf{v}\|$ and direction of $\mathbf{v}$, θ , then...

$a = \|\mathbf{v}\| \cos\theta \qquad b = \|\mathbf{v}\| \sin\theta$

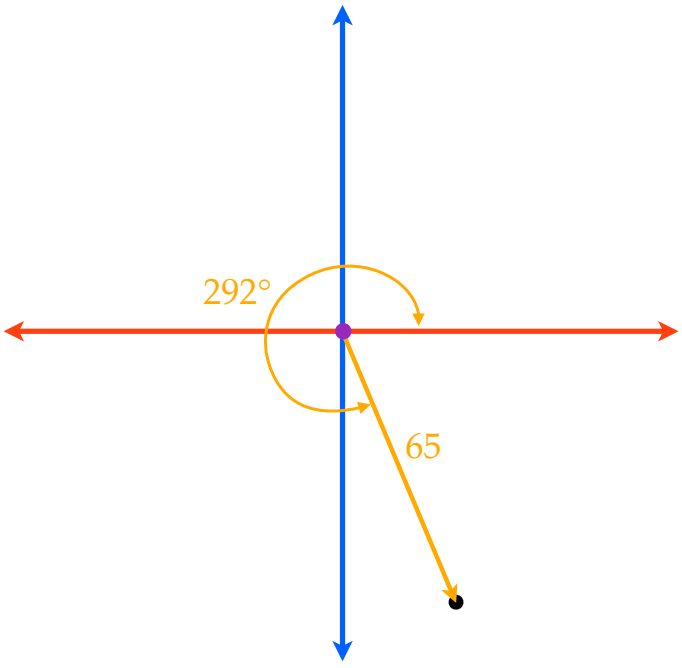
$\|\mathbf{v}\| = 245 \qquad \theta = 190°$



Given $\|\mathbf{v}\|$ and direction of $\mathbf{v}$, θ , then...

$a = \|\mathbf{v}\| \cos\theta \qquad b = \|\mathbf{v}\| \sin\theta$

$\|\mathbf{v}\| = 65 \qquad \theta = 292°$



Given $\|\mathbf{v}\|$ and direction of $\mathbf{v}$, θ , then...

$$a = \|\mathbf{v}\| \cos\theta \qquad b = \|\mathbf{v}\| \sin\theta$$

$$\mathbf{v} = \langle a, b \rangle \qquad \mathbf{v} = a\mathbf{i} + b\mathbf{j}$$