Parallel Vectors

Name _____

Date _____ Period _____

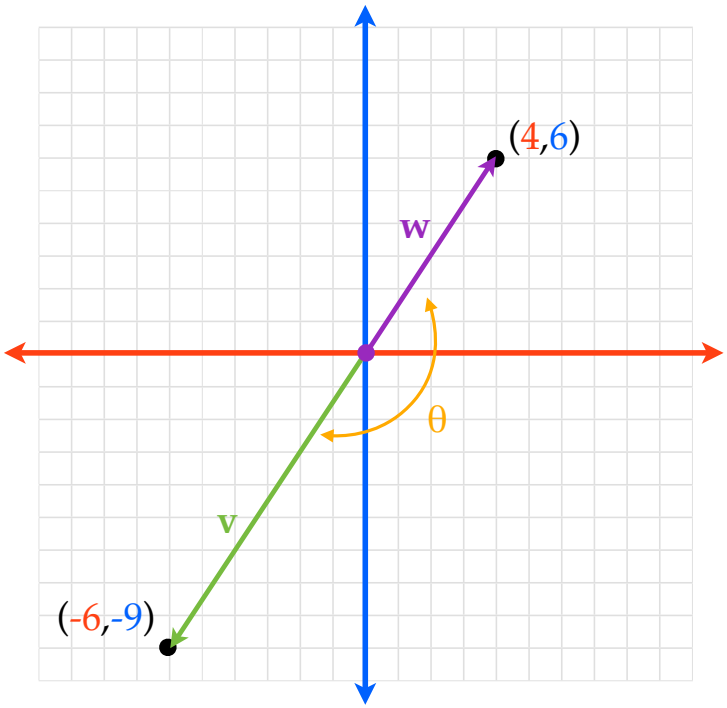
Given $\mathbf{v}$ and $\mathbf{w}$, the angle θ ($0° \le \theta \le 180°$) between $\mathbf{v}$ and $\mathbf{w}$ is determined by

$$\cos\theta = \frac{\mathbf{v} \cdot \mathbf{w}}{\|\mathbf{v}\|\|\mathbf{w}\|}$$

$\mathbf{v}$ and $\mathbf{w}$ are parallel vectors if the angle, θ, between $\mathbf{v}$ and $\mathbf{w}$ is $0°$ or $180°$

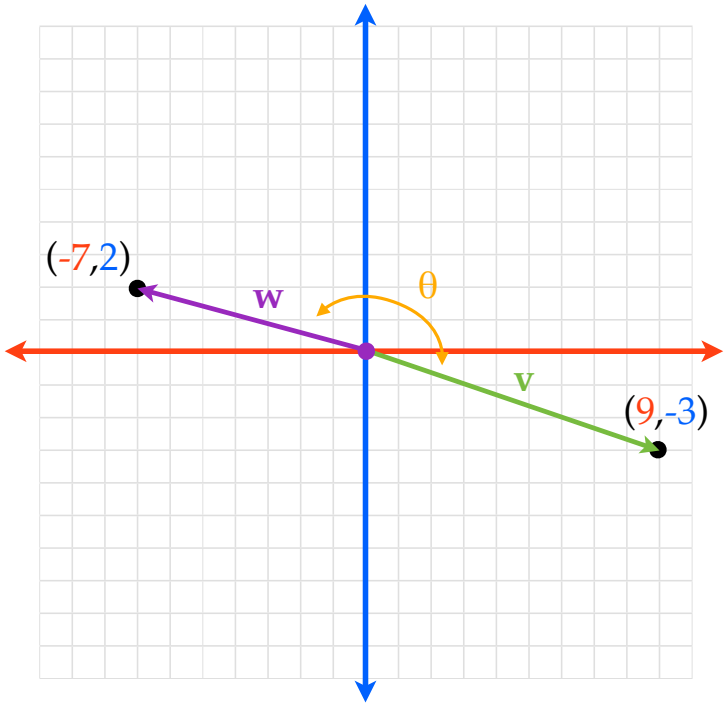
$$\cos\theta = \frac{\mathbf{v} \cdot \mathbf{w}}{\|\mathbf{v}\|\|\mathbf{w}\|}$$

Determine if $\mathbf{v}$ and $\mathbf{w}$ are parallel given $\mathbf{v} = \langle -6,-9 \rangle$ and $\mathbf{w} = \langle 4,6 \rangle$



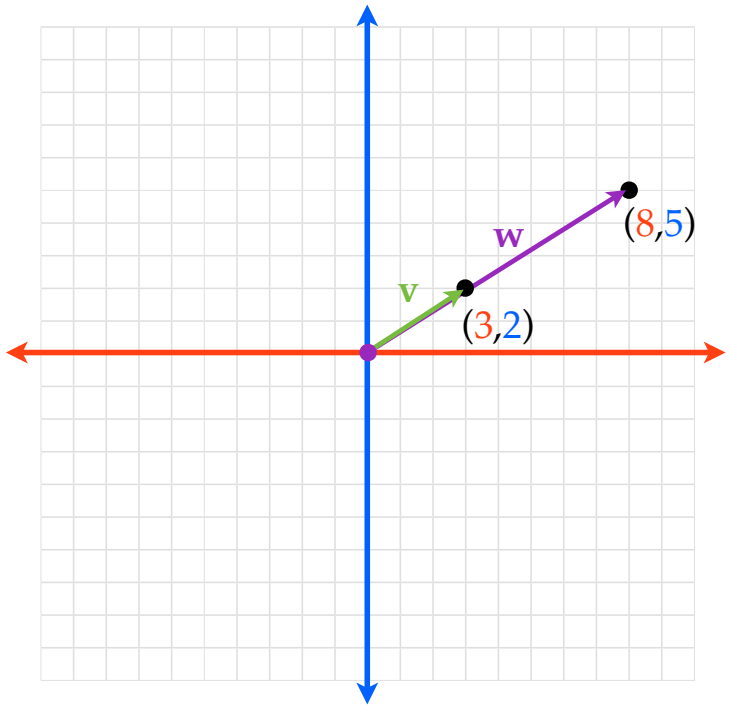
$$\cos\theta = \frac{\mathbf{v}\cdot\mathbf{w}}{\|\mathbf{v}\|\|\mathbf{w}\|}$$

Determine if **v** and **w** are parallel given $\mathbf{v} = 9\mathbf{i} - 3\mathbf{j}$ and $\mathbf{w} = -7\mathbf{i} + 2\mathbf{j}$



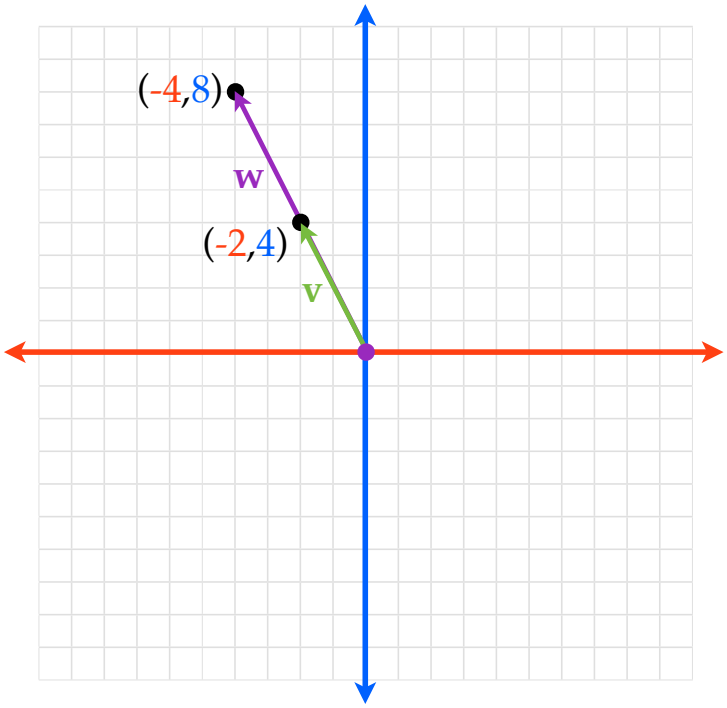
$$\cos\theta = \frac{\mathbf{v}\cdot\mathbf{w}}{\|\mathbf{v}\|\|\mathbf{w}\|}$$

Determine if **v** and **w** are parallel given $\mathbf{v} = \langle 3,2\rangle$ and $\mathbf{w} = \langle 8,5\rangle$



$$\cos\theta = \frac{\mathbf{v}\cdot\mathbf{w}}{\|\mathbf{v}\|\|\mathbf{w}\|}$$

Determine if **v** and **w** are parallel given $\mathbf{v} = -2\mathbf{i} + 4\mathbf{j}$ and $\mathbf{w} = -4\mathbf{i} + 8\mathbf{j}$



Given **v** and **w**, the angle θ ($0° \le \theta \le 180°$) between **v** and **w** is determined by

$$\cos\theta = \frac{\mathbf{v}\cdot\mathbf{w}}{\|\mathbf{v}\|\|\mathbf{w}\|}$$

v and **w** are parallel vectors if the angle, θ, between **v** and **w** is $0°$ or $180°$