Operations with Vectors in <a,b> Component Form

Given scalar α and $\mathbf{v} = \langle a,b \rangle$

$$\alpha\mathbf{v} = \langle \alpha a, \alpha b \rangle$$

$\alpha = 2 \qquad \mathbf{v} = \langle 1,4 \rangle$
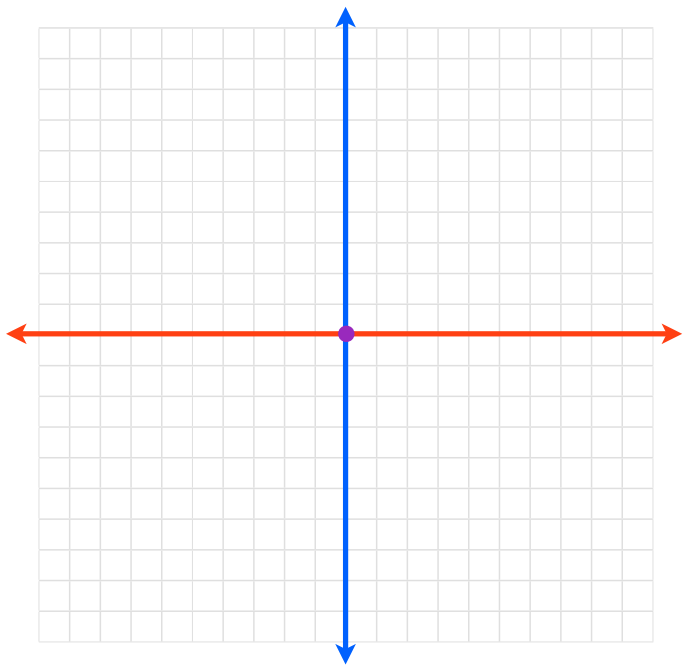
Given scalar α and $\mathbf{v} = \langle a,b \rangle$
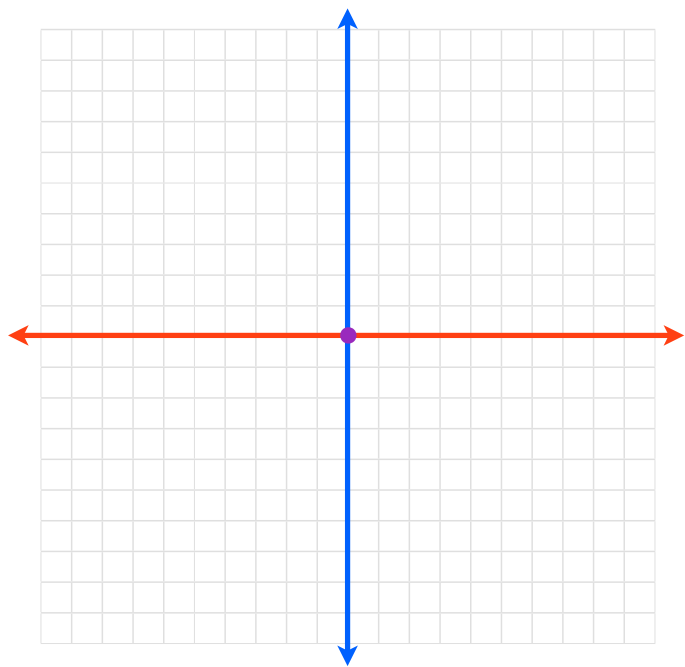
$$\alpha\mathbf{v} = \langle \alpha a, \alpha b \rangle$$

$\alpha = 3 \qquad \mathbf{v} = \langle -2,-3 \rangle$

Given $\mathbf{v} = \langle a_1, b_1 \rangle$ and $\mathbf{w} = \langle a_2, b_2 \rangle$

$\mathbf{v} + \mathbf{w} = \langle a_1 + a_2, b_1 + b_2 \rangle$

$\mathbf{v} = \langle 5, 3 \rangle$ $\mathbf{w} = \langle 1, 4 \rangle$

Given $\mathbf{v} = \langle a_1, b_1 \rangle$ and $\mathbf{w} = \langle a_2, b_2 \rangle$

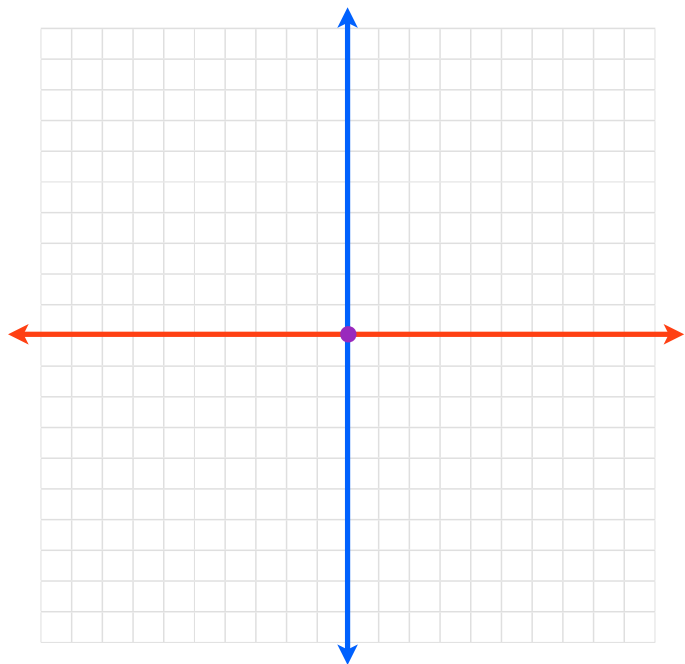$\mathbf{v} + \mathbf{w} = \langle a_1 + a_2, b_1 + b_2 \rangle$

$\mathbf{v} = \langle 7, 2 \rangle$ $\mathbf{w} = \langle -3, 3 \rangle$

Operations with Vectors in <a,b> Component Form

Given $\mathbf{v} = \langle a_1, b_1 \rangle$ and $\mathbf{w} = \langle a_2, b_2 \rangle$

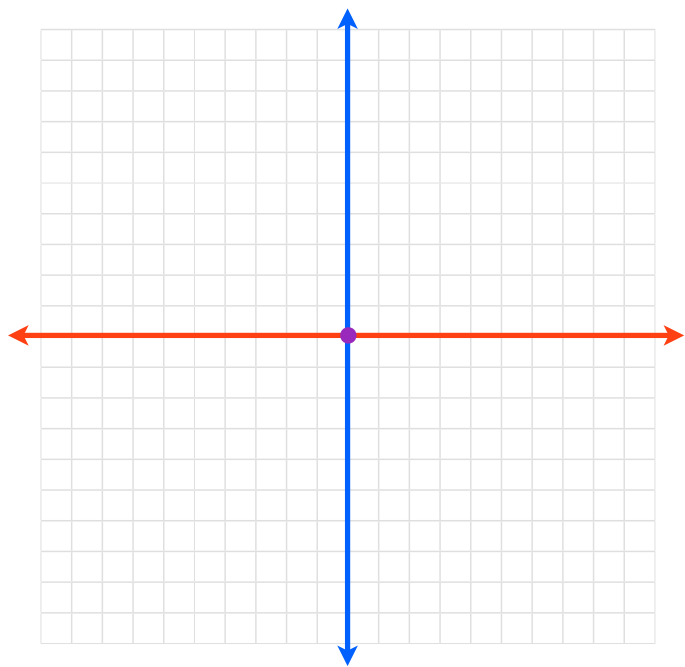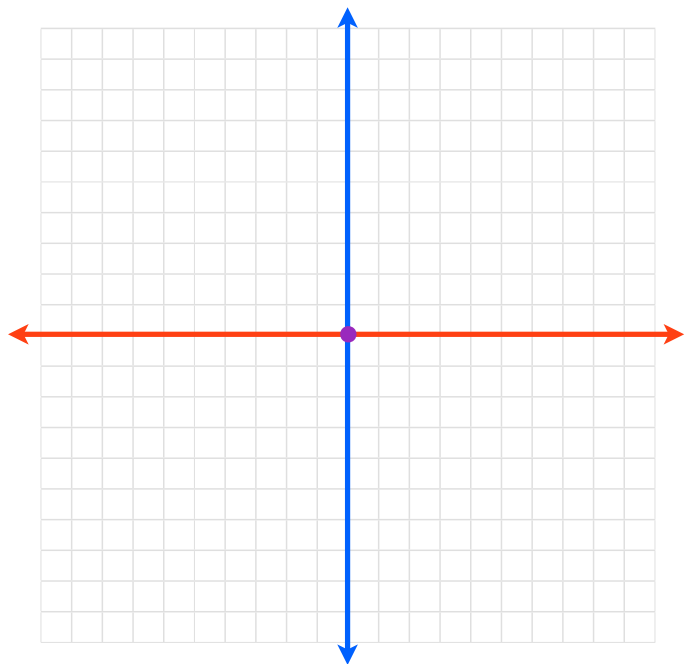$\mathbf{v} + \mathbf{w} = \langle a_1 + a_2, b_1 + b_2 \rangle$

$\mathbf{v} = \langle 3, -8 \rangle \quad \mathbf{w} = \langle -9, 1 \rangle$

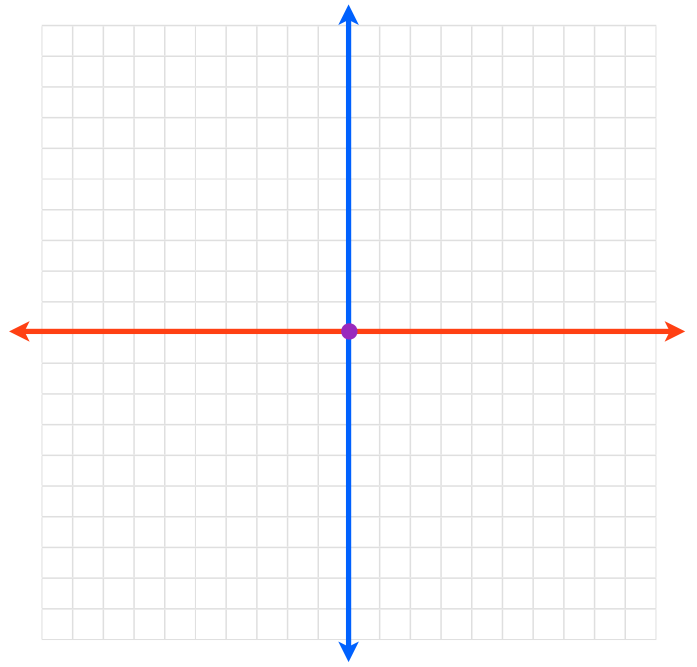Given $\mathbf{v} = \langle a_1, b_1 \rangle$ and $\mathbf{w} = \langle a_2, b_2 \rangle$

$\mathbf{v} + \mathbf{w} = \langle a_1 + a_2, b_1 + b_2 \rangle$

$\mathbf{v} = \langle 7, 2 \rangle \quad \mathbf{w} = \langle -3, 3 \rangle$

Given **v** = ⟨2,-5⟩ and **w** = ⟨-4,3⟩
find the following.

2**v** + 2**w**

Given **v** = ⟨2,-5⟩ and **w** = ⟨-4,3⟩
find the following.

2**v** + 2**w**   3**v** − 4**w** = 3**v** + -4**w**

Operations with Vectors in <*a,b*> Component Form
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Given scalar α and $\mathbf{v} = \langle a, b \rangle$

$$\alpha\mathbf{v} = \langle \alpha a, \alpha b \rangle$$

Given $\mathbf{v} = \langle a_1, b_1 \rangle$ and $\mathbf{w} = \langle a_2, b_2 \rangle$

$$\mathbf{v} + \mathbf{w} = \langle a_1 + a_2, b_1 + b_2 \rangle$$

Operations with Vectors in <a,b> Component Form