

Name _____

Date _____

Year Group _____

Find the sum or difference of the following vectors

$$\mathbf{v} = \langle -4, 2 \rangle$$

$$\mathbf{w} = \langle -5, -3 \rangle$$

$$\mathbf{z} = \langle 4, 5 \rangle$$

1. $4\mathbf{v} + \mathbf{w}$

Steps $\Rightarrow 4\mathbf{v} = \langle 4 * \underline{\hspace{1cm}}, 4 * \underline{\hspace{1cm}} \rangle \quad \mathbf{w} = \langle \underline{\hspace{1cm}}, \underline{\hspace{1cm}} \rangle$

Steps $\Rightarrow 4\mathbf{v} = \langle \underline{\hspace{1cm}}, \underline{\hspace{1cm}} \rangle$

Steps $\Rightarrow \langle \underline{\hspace{1cm}} + \underline{\hspace{1cm}}, \underline{\hspace{1cm}} + \underline{\hspace{1cm}} \rangle$

Answer $\Rightarrow \langle \underline{\hspace{1cm}}, \underline{\hspace{1cm}} \rangle$

2. $-3\mathbf{z} - \mathbf{w}$

Steps $\Rightarrow -3\mathbf{z} = \langle -3 * \underline{\hspace{1cm}}, -3 * \underline{\hspace{1cm}} \rangle \quad \mathbf{w} = \langle \underline{\hspace{1cm}}, \underline{\hspace{1cm}} \rangle$

Steps $\Rightarrow -3\mathbf{z} = \langle \underline{\hspace{1cm}}, \underline{\hspace{1cm}} \rangle$

Step $\Rightarrow \langle \underline{\hspace{1cm}} - \underline{\hspace{1cm}}, \underline{\hspace{1cm}} - \underline{\hspace{1cm}} \rangle$

Answer $\Rightarrow \langle \underline{\hspace{1cm}}, \underline{\hspace{1cm}} \rangle$

3. $-5\mathbf{v} + 2\mathbf{z}$

Steps $\Rightarrow -5\mathbf{v} = \langle -5 * \underline{\hspace{1cm}}, -5 * \underline{\hspace{1cm}} \rangle \quad 2\mathbf{z} = \langle 2 * \underline{\hspace{1cm}}, 2 * \underline{\hspace{1cm}} \rangle$

Steps $\Rightarrow -5\mathbf{v} = \langle \underline{\hspace{1cm}}, \underline{\hspace{1cm}} \rangle \quad 2\mathbf{z} = \langle \underline{\hspace{1cm}}, \underline{\hspace{1cm}} \rangle$

Step $\Rightarrow \langle \underline{\hspace{1cm}} + \underline{\hspace{1cm}}, \underline{\hspace{1cm}} + \underline{\hspace{1cm}} \rangle$

Answer $\Rightarrow \langle \underline{\hspace{1cm}}, \underline{\hspace{1cm}} \rangle$