Suppose that $\vec{v} = \langle 3, -1 \rangle$ and $\vec{w} = \langle 2, 4 \rangle$.

1. Sketch the vector $\vec{v}$, based at the origin. Label it $\vec{v}$.

2. Find the terminal point of $\vec{v}$. Label it $(3, -1)$.

3. Sketch a vector based at $(3, -1)$ with coordinate form equal to $\vec{w}$. Label it $\vec{w}$.

4. Find the terminal point of this new vector. Sketch its position vector. (Based at the origin).

5. What is the coordinate form of this position vector?
Repeat this process, but reverse the order.

• Sketch $\vec{w}$ based at the origin.

• Sketch $\vec{v}$, but based at the tip of $\vec{w}$.

• Where did you end up the second time?
\[ \vec{v} = \langle 3, -1 \rangle \]

\[ \vec{w} = \langle 2, 4 \rangle \]

\[ \vec{v} + \vec{w} = \langle 3 + 2, -1 + 4 \rangle = \langle 5, 3 \rangle \]