Last name _____

First name _____

LARSON—MATH 310—CLASSROOM WORKSHEET 01
Adding Vectors & Scalar Multiples

Let $\vec{v} = \begin{bmatrix} 3 \\ 2 \end{bmatrix}$ and $\vec{w} = \begin{bmatrix} 1 \\ -1 \end{bmatrix}$.

1. Draw $\vec{v}$.

2. Draw $\vec{w}$.

3. Find and draw $\vec{v} + \vec{w}$.

4. Find and draw $\vec{v} - \vec{w}$.

5. Find and draw $-\vec{v}$.

6. Find and draw $-\vec{w}$.

7. Find and draw $2\vec{v}$.

8. Find and draw $3\vec{v}$.

9. What does the collection of vectors $c\vec{v}$, for arbitrary c describe?

10. Find and draw $2\vec{v} + 3\vec{w}$.

11. Consider the vector $\vec{u} = \begin{bmatrix} 7 \\ 5 \end{bmatrix}$. Explain geometrically why you you *should* be able to find constants a and b so that $a\vec{v} + b\vec{w} = \vec{u}$.

12. Find constants a and b so that $a\vec{v} + b\vec{w} = \vec{u}$.