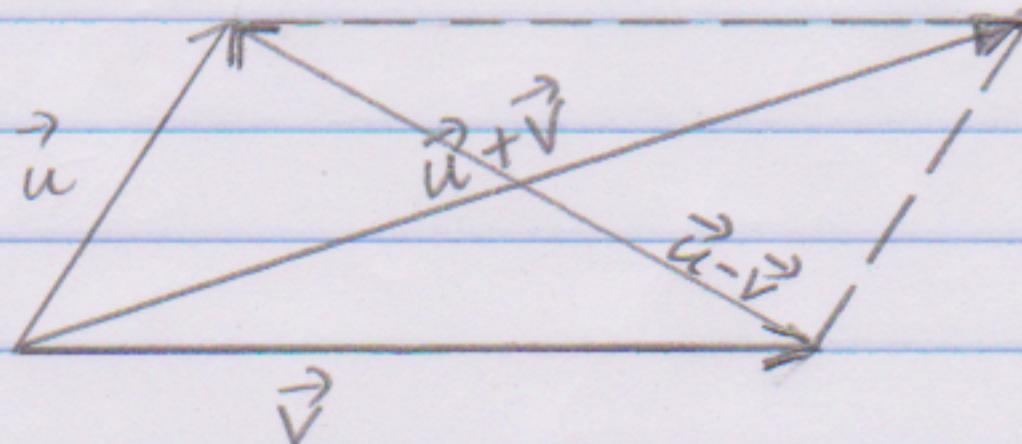


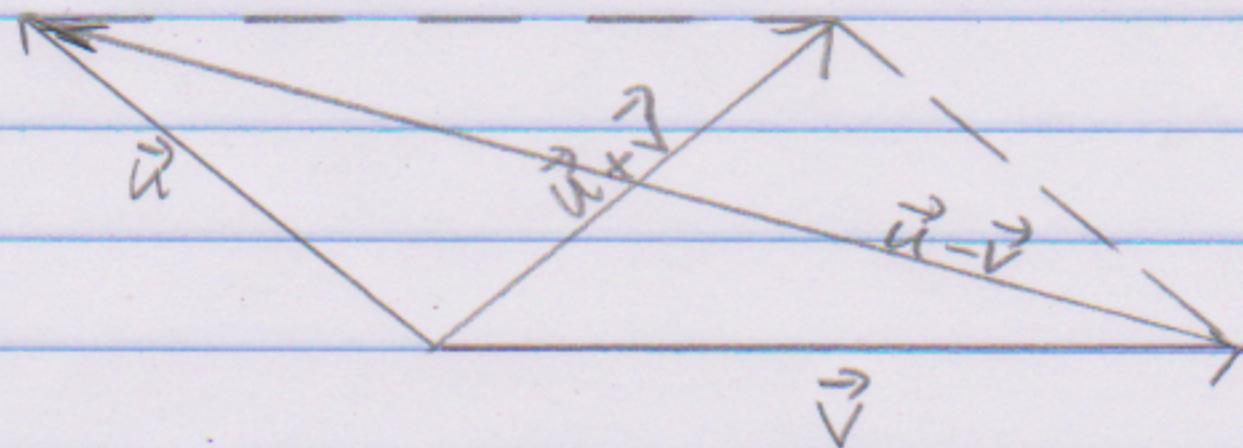
the initial point of \vec{u} and whose terminal point is the terminal point of \vec{v}

Any two vectors with the same initial point form a parallelogram.



So you can see that the sum $\vec{u} + \vec{v}$ and the difference $\vec{u} - \vec{v}$ form the diagonals of the parallelogram.

Another example



Adding and Subtracting Vectors in the xy-coordinate system:

Let $\vec{u} = (2, 3)$ and $\vec{v} = (-5, 1)$. Then:

$$\vec{u} + \vec{v} = (2, 3) + (-5, 1) = (2 + (-5), 3 + 1) = (-3, 4)$$

$$\vec{u} - \vec{v} = (2, 3) - (-5, 1) = (2 - (-5), 3 - 1) = (7, 2)$$

In general, if $\vec{u} = (u_1, u_2)$ and $\vec{v} = (v_1, v_2)$, then

$$\vec{u} + \vec{v} = (u_1 + v_1, u_2 + v_2) \text{ and } \vec{u} - \vec{v} = (u_1 - v_1, u_2 - v_2)$$

Now lets look at the sum and difference on the xy-coordinate system