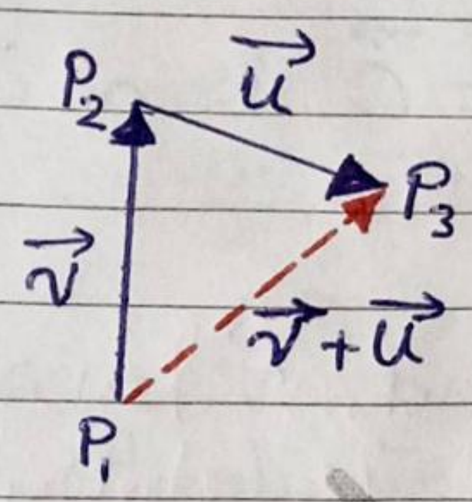
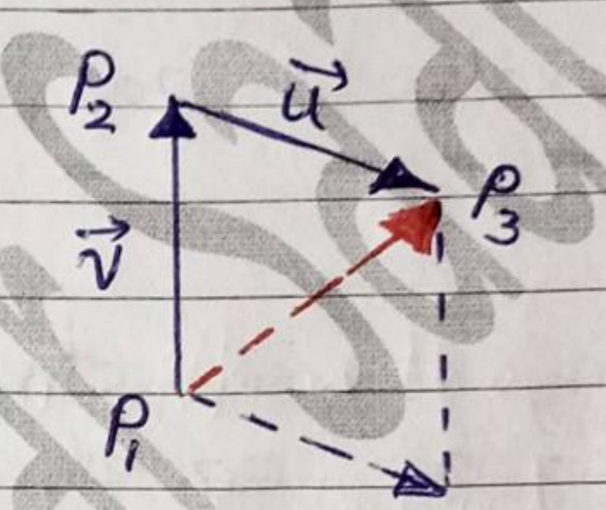
Notes:

1) If $\vec{v}$ and $\vec{u}$ are vectors in $\mathbb{R}^2$ or $\mathbb{R}^3$ and

$\vec{v} = \overrightarrow{P_1P_2}$ and $\vec{u} = \overrightarrow{P_2P_3}$ then the sum

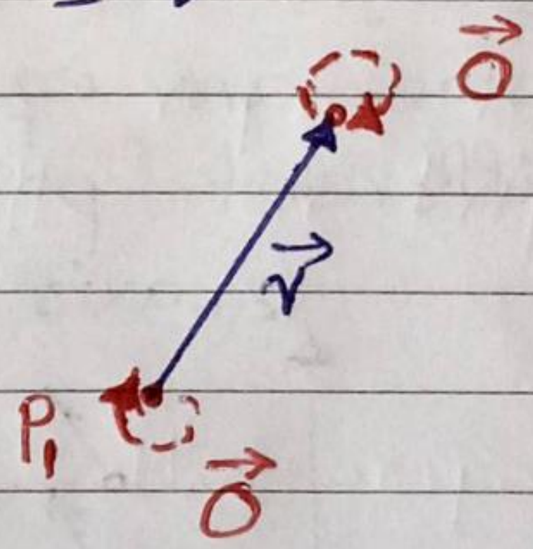
$\vec{v}+\vec{u}$ is the vector from the initial point of $\vec{v}$ to the terminal point of $\vec{u}$.





2) Since the initial & terminal point of $\vec{0}$ coincide, it follows that:

$$\vec{0}+\vec{v} = \vec{v}+\vec{0} = \vec{v}$$



Definition:- If $\vec{v}$ is a non-zero vector and k is a non-zero real number (scalar), then the scalar multiple $k\vec{v}$ is defined to be the vector whose length is $|k|$ times