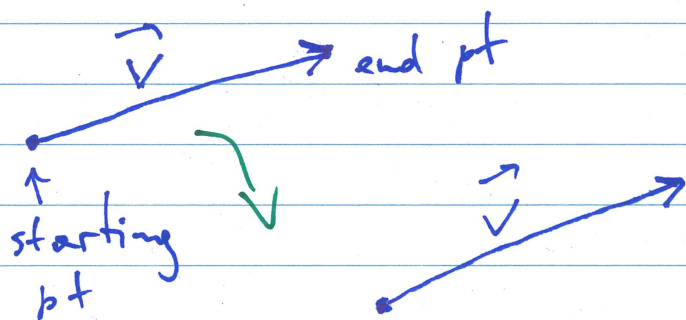


L.S Math 1002 (Linear Algebra)

work with (linear) vector spaces
(the plane, 3-dimensional space, ...)

We can manipulate the basic elements (vectors) of our spaces.

Vector



Any vector has two features:

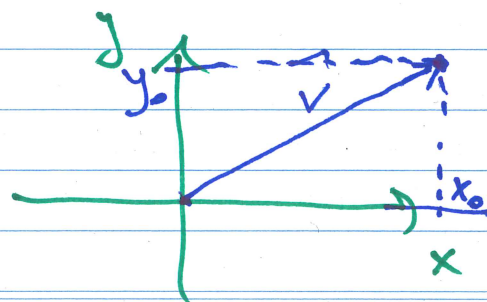
- ① Length (magnitude)
- ② Direction

In the plane :

$\vec{v} \leftrightarrow (x_0, y_0)$

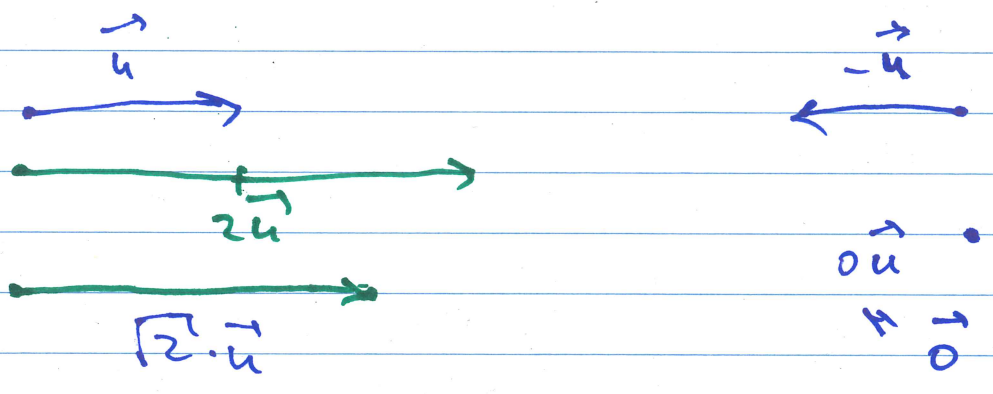
Similarly, in 3-d space:

$\vec{v} \leftrightarrow (x_0, y_0, z_0)$

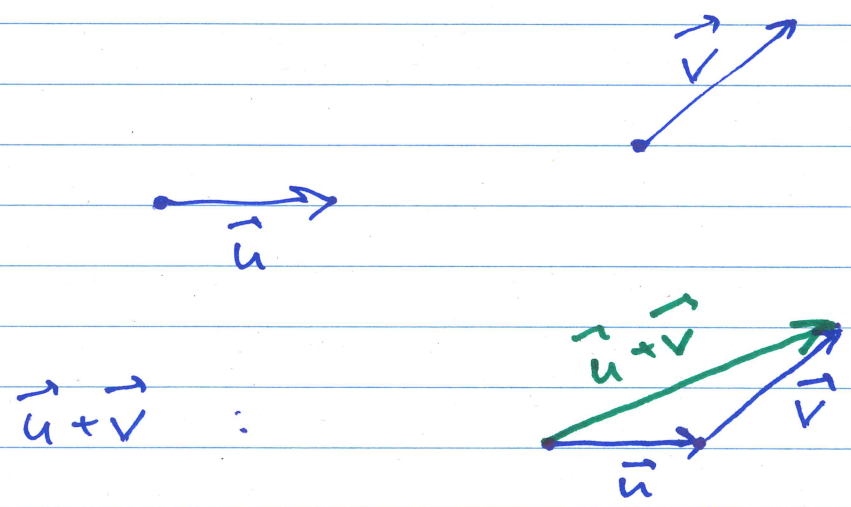


Two operations on vectors:

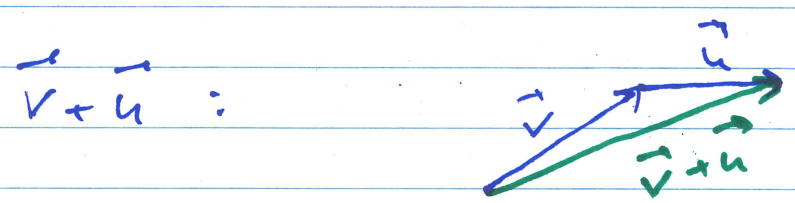
1) Multiplication by a scalar (dilation):
(real number)



2) Addition:



"Rule of Δ "



Claim: $\vec{u} + \vec{v} = \vec{v} + \vec{u}$ for every \vec{u}, \vec{v} .

