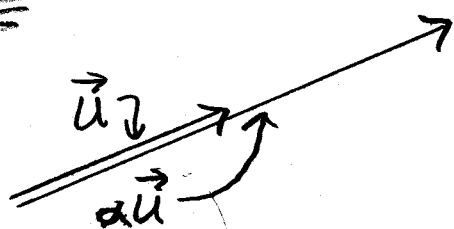
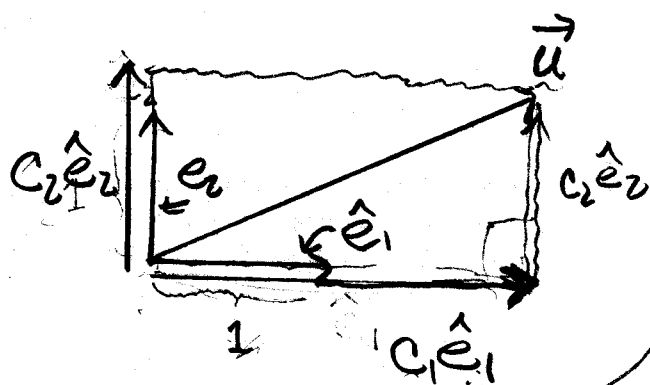
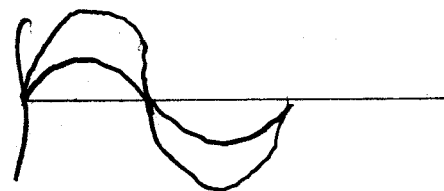


Linear Algebra



α - scalar (number)
scalar mult
 $\alpha \vec{u}$

eg $\alpha = 2$



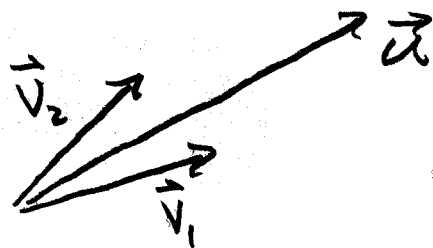
$$\vec{u} = c_1 \hat{e}_1 + c_2 \hat{e}_2$$

So c_1 & c_2 are the components of $\vec{u}$ (coordinates) with respect to basis vectors $\hat{e}_1, \hat{e}_2$

We say $\vec{u}$ is a linear combination of $\hat{e}_1, \hat{e}_2$

$$\vec{u} = c_1 \vec{v}_1 + c_2 \vec{v}_2$$

$\vec{v}_1, \vec{v}_2$ are basis vectors



Suppose we have vector $\vec{v}_1, \vec{v}_2$, then

$\text{span}(\vec{v}_1, \vec{v}_2)$ is the set of all
linear combinations of $\vec{v}_1, \vec{v}_2$