

August 27

MPEX survey

3D vectors and intro to VPython

Scalar is a number and unit 5°F (positive or neg)

Vector is magnitude and direction

$$\vec{r} = \langle x, y, z \rangle = r_x \hat{i} + r_y \hat{j} + r_z \hat{k}$$

from visual import *
sphere()

$$\hat{i} = \langle 1, 0, 0 \rangle$$

$$\hat{j} = \langle 0, 1, 0 \rangle$$

$$\hat{k} = \langle 0, 0, 1 \rangle$$

magnitude of vector (length) is positive

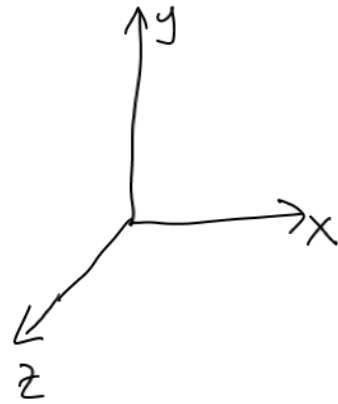
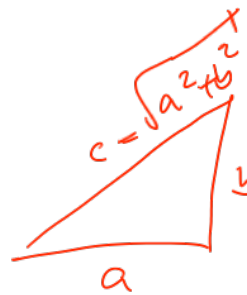
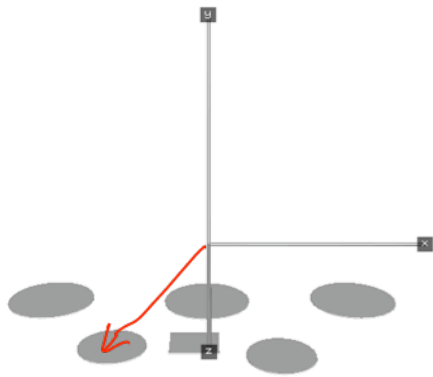


Table that thought



$$|\vec{r}| = r = \sqrt{x^2 + y^2 + z^2}$$

`arrow(pos = vector(0,0,0), axis = vector(x,y,z), color = color.red)`