

Jan 5

Welcome to Phys 0175

Who are your instructors and why are they here?

Who are you and why are you here?

<http://www.phyast.pitt.edu/~akl2>

What will we be doing?

Tangible: Illuminate Me!

3D Vectors

$$\vec{r} = \langle x, y, z \rangle$$

$$= r_x \hat{i} + r_y \hat{j} + r_z \hat{k}$$

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

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

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



magnitude of vector

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

↑ always positive

$$\hat{r} = \frac{\vec{r}}{|\vec{r}|} \Rightarrow \vec{r} = |\vec{r}| \hat{r}$$