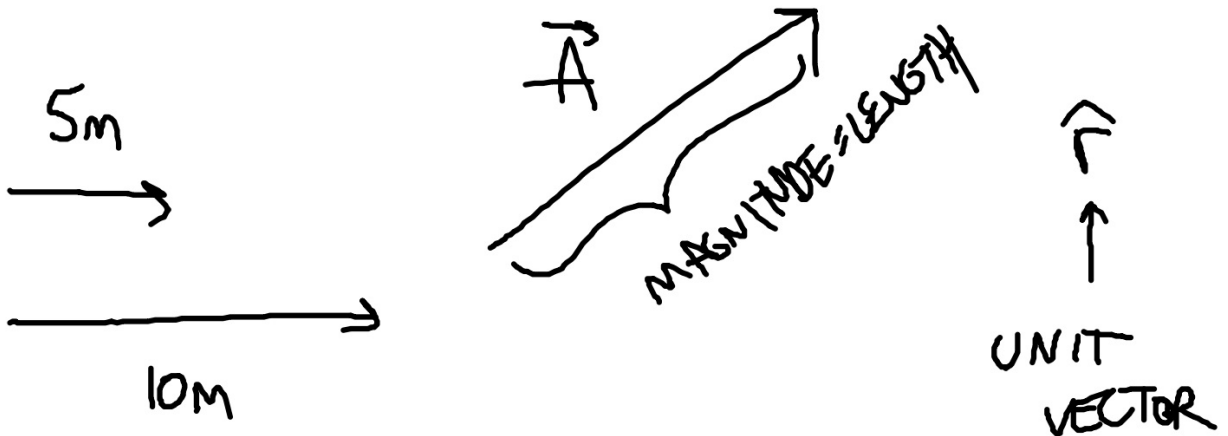
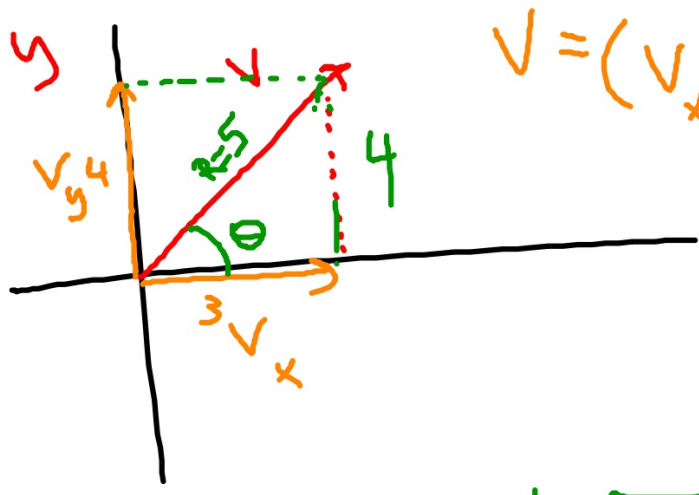


VECTORS POINT AND HAVE MAGNITUDE





$$V = (V_x, V_y)$$

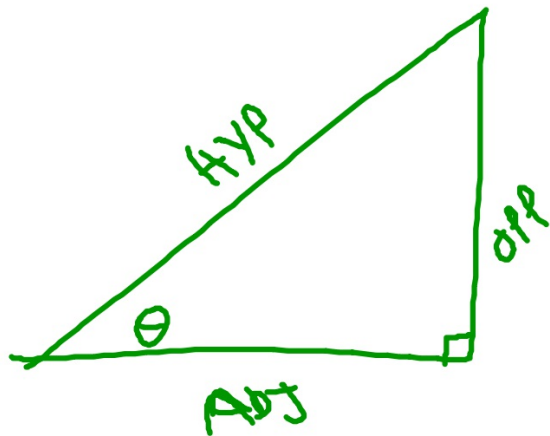
RECTANGULAR FORM

$$\vec{V} = (3, 4)$$

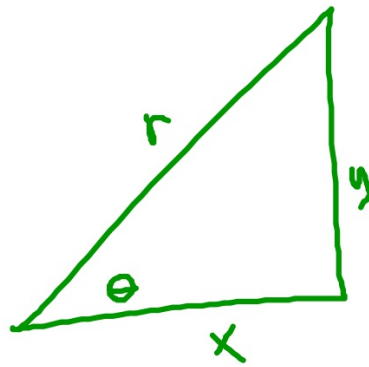
$$\vec{V} = 3\hat{i} + 4\hat{j}$$

MAGNITUDE $|V| = \sqrt{V_x^2 + V_y^2}$

TRIG



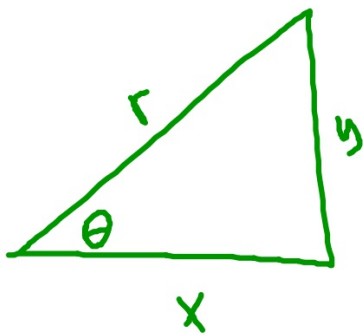
SOHCAHTOA



$$\sin \theta = \frac{\text{OPP}}{\text{HYP}}$$

$$\cos \theta = \frac{\text{ADJ}}{\text{HYP}}$$

$$\tan \theta = \frac{\text{OPP}}{\text{ADJ}}$$

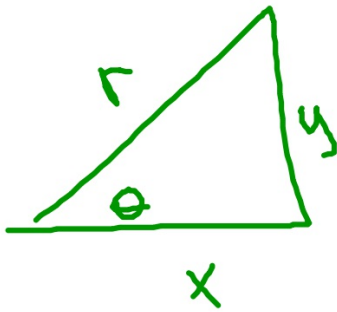


$$r \sin \theta = \frac{y}{1} \quad \cancel{r} \quad \cancel{1}$$

$$y = r \sin \theta$$

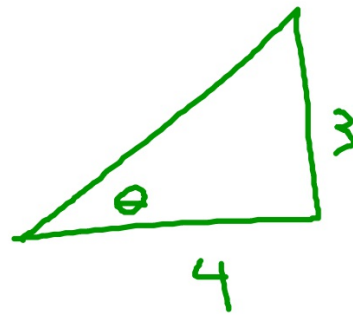
$$\cos \theta = \frac{x}{r}$$

$$x = r \cos \theta \quad r^2 = x^2 + y^2$$



$$\sin \theta = \frac{y}{r}$$

$$\sin^{-1}\left(\frac{y}{r}\right) = \theta$$

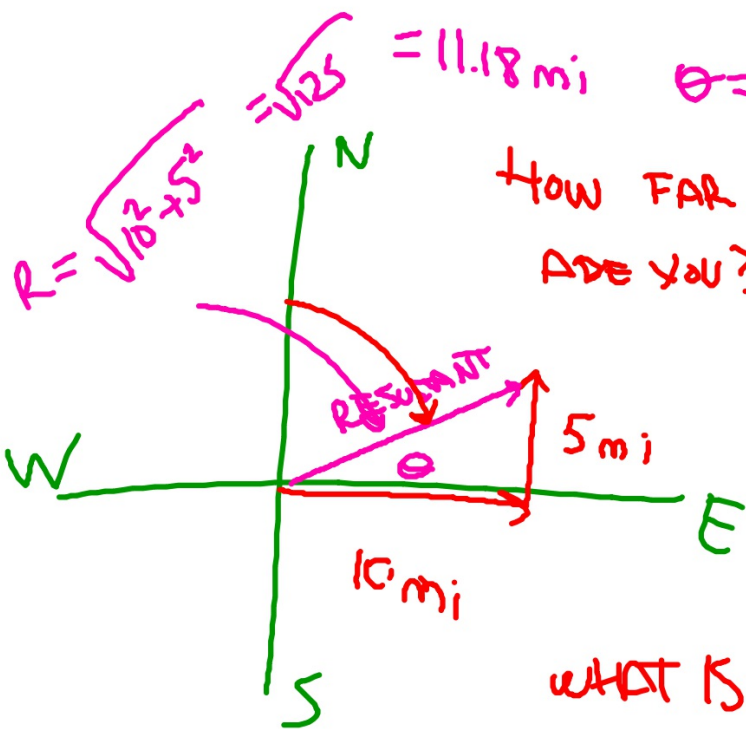


$$\theta = 36.9^\circ$$

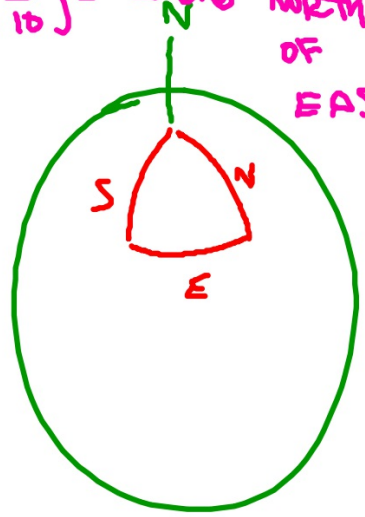
$$\theta = ? \quad \tan^{-1}\left(\frac{3}{4}\right)$$

$$\cos^{-1}\left(\frac{x}{r}\right) = \theta$$

$$\tan^{-1}\left(\frac{y}{x}\right) = \theta$$



$\theta = \tan^{-1}\left(\frac{5}{10}\right) = 26.6^\circ$ NORTH OF EAST



WHAT IS YOUR POSITION IN DEGREES?



$$\vec{A} = (10, 0)$$

$$\vec{B} = (0, 5)$$

$\vec{A} + \vec{B}$

$$(10, 5)$$