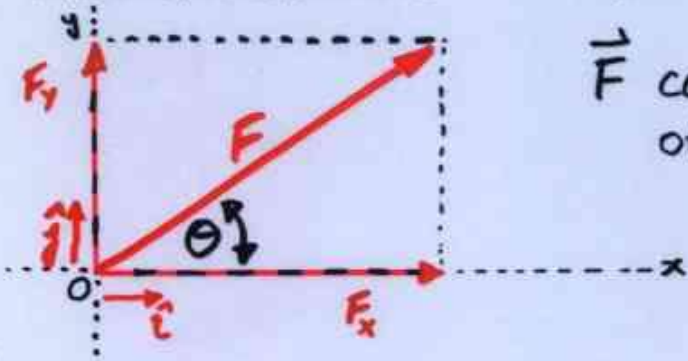
RECTANGULAR COMPONENTS ... 2D



$\vec{F}$ can be given as the sum of components $\vec{F}_x$ and $\vec{F}_y$

(USE BROKEN LINES FOR COMPONENTS)

UNIT VECTORS $\hat{i}$ & $\hat{j}$ ARE USEFUL TO INTRODUCE

then $\vec{F}_x = \|F_x\|\hat{i}$; $\vec{F}_y = \|F_y\|\hat{j}$ AND

$$\vec{F} = \|F_x\|\hat{i} + \|F_y\|\hat{j}$$

LOOKING AT TRIGONOMETRY WE SEE

$$\|F_x\| = \|F\| \cos(\theta) \qquad \|F_y\| = \|F\| \sin(\theta)$$

$$\|F\| = \sqrt{\|F_x\|^2 + \|F_y\|^2} \qquad \tan(\theta) = \|F_y\| / \|F_x\|$$

WHERE you PUT the ORIGIN "O", and alignment of axes IS a matter OF judgement

e.g.