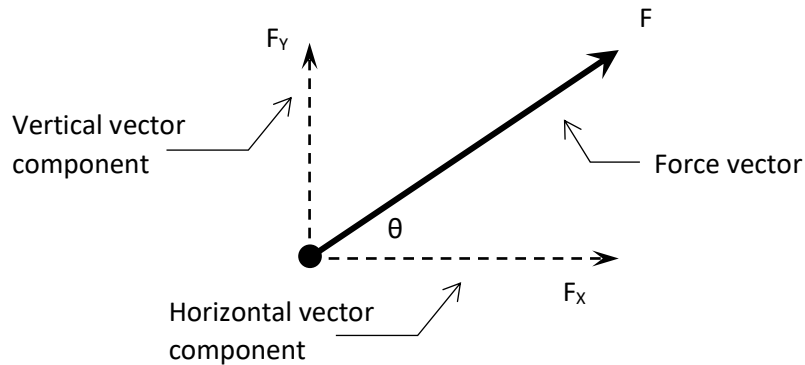


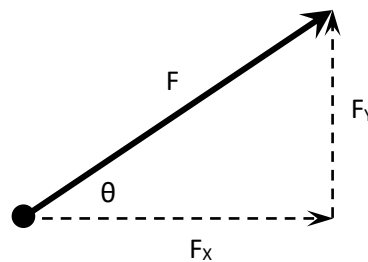


## Resolution of force vectors

A force is a vector quantity meaning it has both a magnitude and a direction. In practice it is often useful to resolve the force into its vector components which act along the x and y axes.



The vector components will always form a right-angled triangle with the force vector meaning their magnitudes can be determined by using trigonometric identities.

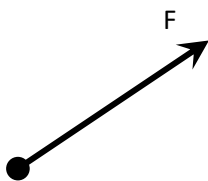


The horizontal vector component acts along the x axis and is given by:  $F_x = F \cdot \cos(\theta)$

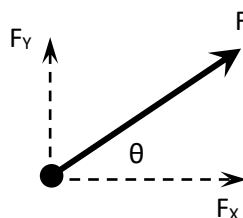
The vertical vector component acts along the y axis and is given by:  $F_y = F \cdot \sin(\theta)$

### Process for resolving force vectors

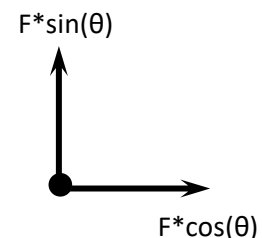
Represent the force as a vector



Split the vector into the horizontal and vertical components



Determine the magnitudes of the two components



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