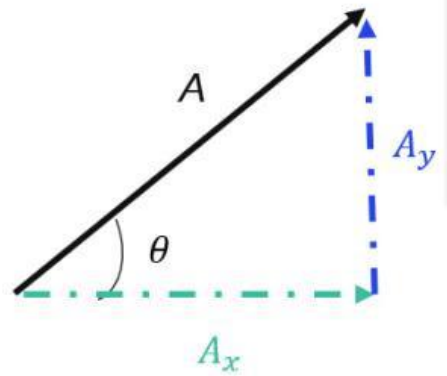


$$\cos \theta = \frac{\text{adjacent side}}{\text{hypotenuse}} = \frac{A_x}{A}$$

$$\sin \theta = \frac{\text{opposite side}}{\text{hypotenuse}} = \frac{A_y}{A}$$

$$\tan \theta = \frac{\text{opposite side}}{\text{adjacent side}} = \frac{A_y}{A_x}$$



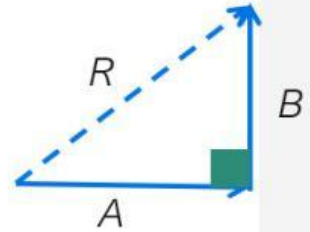


Adding vectors (with angles)

1 Vectors with 90 angle

For perpendicular vectors, We use Pythagorean theorem.
A and B are perpendicular vectors, the resultant vector is

$$R^2 = A^2 + B^2$$



2 Vectors with angle other than 90

We use the law of sines or the law of cosines

Law of sines

$$\frac{R}{\sin \theta} = \frac{A}{\sin a} = \frac{B}{\sin b}$$

Law of cosines

$$R^2 = A^2 + B^2 - 2AB \cos \theta$$

