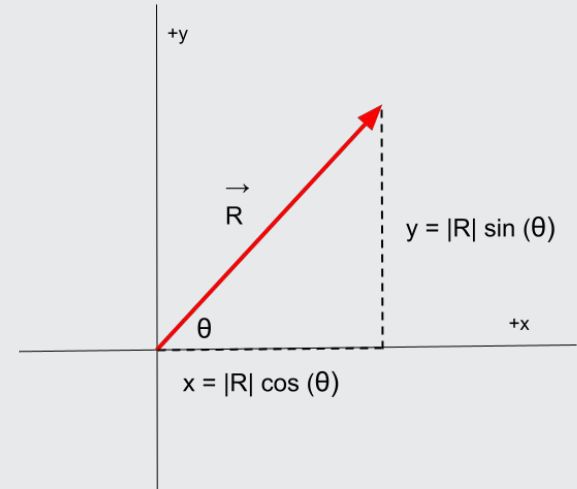


# Vector Addition By Components

1. Select a coordinate system: note positive x and y (and z) directions
2. Draw the vectors: make sure you label them
3. Find the x and y (and z) components of all the vectors
4. Find the sums in the x and y directions using addition (and subtraction)
5. Use the Pythagorean theorem to find the magnitude of the resultant vector
6. Use a trig function to find the direction: often angle with respect to the positive x axis



$$\Sigma x = x_1 + x_2$$

$$\Sigma y = y_1 + y_2$$

$$|R| = \sqrt{(x^2 + y^2)}$$

$$\text{Tan } (\Theta) = \Sigma y / \Sigma x$$