Consider three vectors $\vec{A}$ and $\vec{B}$ and $\vec{C}$ as shown. You are given the following:

- The length of vector $\vec{A}$ is 5 units and the angle between vector $\vec{A}$ and the $x$-axis is $\theta = 53.1^\circ$. (Note — no calculator needed: $\cos \theta = 0.6$ and $\sin \theta = 0.8$.)

- The length of vector $\vec{B}$ is 2 units and it points along the $x$-axis.

- The $x$- and $y$- components of vector $\vec{C}$ are shown in the figure.

Calculate the following three vectors, and find which one is longest:

$$\vec{R}_1 = \vec{A} + \vec{B} + \vec{C}$$

$$\vec{R}_2 = \vec{A} - \vec{B} + \vec{C}$$

$$\vec{R}_3 = \vec{A} + \vec{B} - \vec{C}$$

**Answers** (show components using vector notation like we just did in class)

$\vec{R}_1 =$ ________________

$\vec{R}_2 =$ ________________

$\vec{R}_3 =$ ________________

Longest of the three is ______