# Lab 01 Sample Calculations

Consider the following vectors:

$$\vec{A}=5\hat{x}+3\hat{y}:\vec{B}=7\hat{x}+1\hat{y}$$

Find the vector $\vec{C}$ so that:

$$\vec{A}+\vec{B}+\vec{C}=\vec{0}$$

Show the results of the following operations:

$$\vec{A}\cdot\vec{B}=$$

$$|\vec{A}|=$$

Find the unit vector along the direction of $\vec{A}$ which is given by:

$$\hat{A}\equiv\frac{\vec{A}}{|\vec{A}|}$$

Find the angle that $\vec{B}$ makes with respect to the x axis and with respect to the y axis.

Express $\vec{B}$ in the following form:

$$\vec{B}=|\vec{B}|\cos(\theta_{\vec{B},\hat{x}})\hat{x}+|\vec{B}|\sin(\theta_{\vec{B},\hat{x}})\hat{y}$$