

- Find the curl of $\vec{v}(x, y) = \sin(y) \hat{x} + \sin(x) \hat{y}$.
- Use Mathematica to plot a vector plot of $\vec{v}(x, y)$ in the range $-2 \leq x \leq 2$ and $-2 \leq y \leq 2$. Label the x-axis and the y-axis.
- Pick three points such that their curl is negative, zero, and positive, respectively. Mark the points in your vector plot and find their curl.
- What can you say about your calculations and the rotation of the vector \vec{v} around the point you picked?