Student handout

Use the *Sage* code at Using Technology to Visualize the Gradient to plot scalar functions of two variables, predict what a plot of the gradient looks like, and then check it.

1 Instructor's Guide

1.1 Student Task

This activity is a great follow up to Acting Out the Gradient. The students should know that the gradient is perpendicular to level curves (surfaces) and that its magnitude is the maximum slope. They use this information to predict the gradient vector field from looking at level curves for scalar fields. Then check their predictions with the Mathematica worksheet. The worksheet is open-ended and students can plot some scalar fields of their own.