

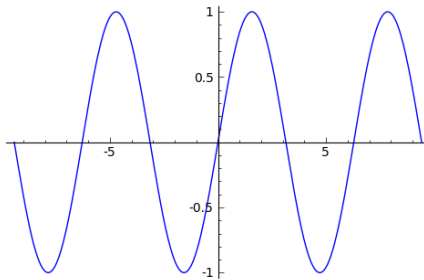
Math 480a: Sage, Spring 2011, Homework 6

William Stein

Due May 11, 2011

Instructions: Do the following 5 problems, and turn them in by the beginning of class on Wednesday, May 11, 2011. If you get help from a classmate or friend on any homework problem, please explicitly thank them in your write up. These problems will help you develop your ability to work with graphics in Sage. Your solution to this homework should be a Sage worksheet whose output images look “reasonably” like the images given below. They do not have to be exactly the same.

1. Use Sage to create a 2d plot that looks like this:

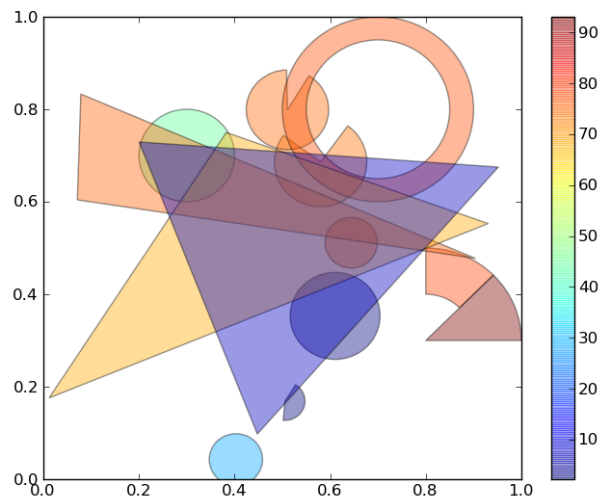


2. Use Sage to create a 2d plot that looks like this:

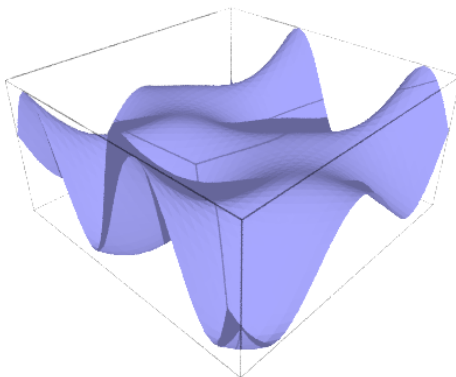


[Hints: You may need to use the `zorder` parameter to make sure one graphic object appears on top of the other. Also, be sure to use `aspect_ratio=1` and `axes=False`.]

3. Use Sage to create a 2d plot that looks like this (Hint: Look through <http://matplotlib.sourceforge.net/gallery.html> and copy some code with one minor change to make it work in the Sage notebook.):



4. Use Sage to create a 3d plot of the function $z = \sin(x - y)y \cos(x)$.



5. Use Sage to draw a Moebius strip in 3d. [Hint: A judicious search of the Sage documentation and copy-paste is a good first step.]

