

Homework 1: MAT 331

Due: 11:59pm, Feb 7 [NOTE CHANGE]

Collaboration policy: You are welcome to work with others on this homework assignment. But the code and explanations you turn in should actually be written by you. In particular, you should not submit code that you copied from an email a friend sent you.

Submission instructions: You will submit the assignment in Blackboard, as Homework 1 in the Assignments tab. You will submit a single Jupyter `.ipynb` notebook file that contains your solutions to problems 2 and 3 below (there is nothing to turn in for problem 1). Please clearly label your solutions with a comment (recall that placing a `#` symbol in your code makes everything from that symbol to the end of the line a comment). Please name the file `HW01_lastname_firstname.ipynb`. For example, if I was submitting the homework, I would upload a file called `HW01_dozier_benjamin.ipynb`.

Do not include scratch work that turned out to be unnecessary. When we test your code, we will run every cell in order, and no error messages should be produced.

If you have a reason that your submission cannot conform to all the above criteria, please send me an email and we will work something out.

1. (Nothing to turn in) Figure out a way to use SageMath with Jupyter outside of the classroom.

Here are some options:

- (Strongly recommended) **Download SageMath 8.9 for your personal computer (note that this is not the most recent version)**. Your Computer will need to be reasonably modern, and you will need several GB of free disk space. It is available for Mac, Windows, and Linux. See the “Useful resources” section of the website for the download link.
 - **Use SageMath via the online server Cocalc.com**. With a free account, you should be able to do everything you need, but it may not be very fast. You can also pay for an upgraded account. By default Cocalc uses its own customized version of Jupyter, but you should use it with Plain Jupyter (aka Classic Jupyter). To do this, once you have created a project, but before adding files to it, click the Settings tab, and then go to the Plain Jupyter section, and click the Plain Jupyter Server link. The page you get should look quite similar to what we use in class. When you make a new file with the button near the upper right, there will be a long list of options - you should select “SageMath 8.9”.
2. Draw a spiral figure like the one in Figure 1. It does not have to be exactly the same, but make sure the curve winds around several times. Don’t worry about what the numbers on the axes are, or exactly how many times the curve winds around.

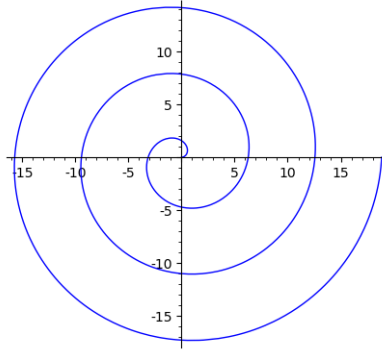


Figure 1: Spiral

3. Find the sum of all positive integers less than 10,000 that are multiples of both 3 and 7.