Task 3

1. What are the differences between the plots?

The plots with the larger step sizes tend to be more jagged in shape and less representative of the sine wave.

2. What is an appropriate step size to plot the sine wave shape "accurately?"

Ideally, the smaller the step size, the more representative of the sine wave. A step size of 0.01 seems appropriate for the function.

3. When is it appropriate to choose a lower resolution

Lower resolution is appropriate when the computer cannot handle the calculations, because at a certain extent, plotting the function with infinitesimally small steps is unnecessary. It is also appropriate when graphing the functions by hand.

Task 4

1. What can you say about the "randomness" of the generator? Does the histogram look like what you expected if the experiment was performed with a (perfectly uniform) real die?

Yes, it approximately resembles what I would expect. The quantities of each number rolled should be somewhat similar assuming the die is perfectly uniform. The generator is random in that every time the code is run, a different histogram is produced.

2. What is the difference between combining lists together in Python to combining arrays together in MATLAB?

Combining lists in Python adds more elements to the list, but in MATLAB you have the option to combine multiple lists together into matrices.

3.Of the two programs, which is easier to perform operations on large data sets?

MATLAB is more suited to working with large sets of numbers

Task 5

1. In this context, explain the terminology 'map'

Map is something that leads you to what you're looking for. In this context you give the map a number (1, 2 or 3) which then leads you to the name of the pin that you're looking for.

2. What is a good way of storing such a map in MATLAB?

A matrix

3. How would you change the function to use 0, 1, and 2 as inputs instead of 1, 2, and 3?

Add 1 to the user input right before you use it to refer to the array

4. How does MATLAB differ from Python when using arrays / lists?

Matlab works with and compiles arrays and list a lot faster than Python does.

Task 6

1. What arguments does the function require?

The name of the text file if the file is in the same document as the code.

2. How is the function used?

You just set the value of a certain variable equal to the function importdata with the input being the name of the file. This then gives you the arrays of data.

3. How is this similar/different to functions you use in Python?

Python only gets the string data for each of the lines while Matlab creates several different arrays for you with this data.