MAE 215 MATLAB Final Project Proposal

1. Calculating center of mass

I plan create a set of four user-defined MATLAM functions for calculating center of mass for simplified 2D & 3D questions and general surface or volume generated by math functions with boundaries.

For the Simplified tasks, input data about each object’s mass and its coordination will be store in an Excel file, and then converted into matrix in MATLAB. Then, use a For Loop to call out each entries in the matrix and apply the formula:

For the general math functions, I will first using symbolic math tool to define a math function and plot it. Then I will use MATLAB built-in function set for integration to produce the output.

A picture containing text

Description automatically generated

2. Sorting a random row vector

I am thinking about using a for loop with if conditions to compare each element and rearrange the order. Meanwhile, comparing a single element with the row vector might be a part of the method to locate its position. However, I haven’t figured out the concrete solution for this problem, I’ll keep working on this and possibly sort the elements in an random matrix.

Sample input: [4 8 5 -2 11 7 0 2]; output [-2 0 2 4 5 7 8 11]