1. Given data $(x_i, y_i)$ for $i = 1, \ldots, n$, in order to compute the cubic spline coefficients $(b_i, c_i, d_i)$, you must (i) set up the equations (3.30) on page 175, (ii) solve the tridiagonal system by Gaussian elimination for $c$, and (iii) compute the $b_i$ and $d_i$. How many additions, multiplications and divisions are required to do this? (Just give the term proportional to $n$, but show your calculations.)

2. On a piece of graph paper write an interesting letter of the alphabet in cursive. Choose about 10-15 points on the curve of the letter, and record their $x$ and $y$ coordinates in the order in which you wrote the letter. Using Matlab, come up with a parametric spline $(s_x(t), s_y(t))$ that interpolates the data. Plot the parametric spline and the data points. You may want to play around to find a good set of points. Turn in your original letter and a plot of the spline and the $(x, y)$ data.