Homework Assignment 8
Due on Friday 11/23

Programming Problems:

1. Write two Matlab code that computes the coefficients of cubic spline interpolation $s(x)$ with not-a-knot boundary conditions and with clamped boundary conditions. Your code should take $\{x_i, f_i\}$ as input data and output a_i, b_i, c_i, d_i four arrays for not-a-knot boundary conditions. For clamped boundary conditions, your code should take $\{x_i, f_i\}$ and $f'(a), f'(b)$ as input data and output a_i, b_i, c_i, d_i four arrays. Save your code as function M-file and submit it to num_ana@math.nthu.edu.tw

You can download cubic_spline.m and use it with your code to do homework problems below. The code computes $s(x)$ for given points x and interpolating points x_i and coefficients a_i, b_i, c_i, d_i.

Writing Problems:

Do the following exercise problems in the text book by Bradie,

Sec 5.6: 6, 10, 14*, 19*

Sec 5.7: 1*, 2*, 6, 14*, 16*

You may use your code to do 6, 10, 14 in Sec 5.6. **Please provide the intermediate steps and results to show how you get the final answer instead of giving it only**.

We only discuss * problems in discussion section.