

Assignment #8

Instead of Wednesday, this assignment is due on **Friday, May 30**, because of the Monday holiday.

Office hours: No office hour Tuesday, May 27. Instead, I'll have an extra office hour on **Thursday, May 29, 2:30-3:30**.

To do but not hand in:

CC-1, CC-3, CC-5, CC-6, CC-9.

To hand in:

BB-1, BB-2;

CC-7, CC-10, CC-12, CC-18;

DD-1, DD-3.

Problem BB-1. For the cyclic spline interpolation problem with data points $S_0 = (4, 1)$, $S_1 = (1, 4)$, $S_2 = (1, 1)$ (so $n = 3$), calculate cyclic B-spline control points B_0, B_1, B_2 that give back the S_i and sketch the resulting closed curve. (To get the equations use the discussion from lecture or re-develop them using the same principles as for the relaxed spline curves. You may be able to solve the linear equations by inspection. Use a large enough scale to give a meaningful picture.)

Problem BB-2. In the text, p. 132, §9.3, write out a derivation of equation (9.2) but using the notation more familiar from class: The Bézier curves are $P(t)$ and $Q(t)$ with control points $P_0, P_1, P_2, P_3 = S$ and $Q_0 = S, Q_1, Q_2, Q_3$.