

Homework # 9, due Fri, Dec 9th.

1. Calculate explicitly (by hand or using symbolic math software) the polynomial pieces that make up the cardinal spline $B_3 = B_1 * B_1 * B_1$.
2. Compute all eigenvectors and the spectral radius of the transfer operator for the 3rd Daubechies scaling function coming from the expansion of

$$(\cos^2(\omega/2) + \sin^2(\omega/2))^5.$$

How many derivatives of this function are in L^2 ?