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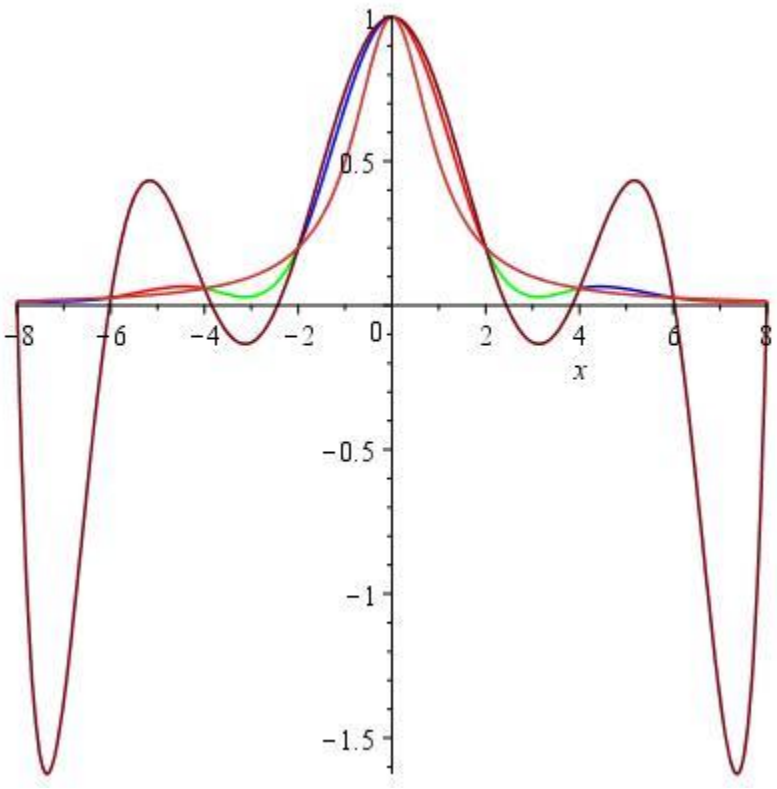
Numerical Analysis

Lab 6

3/20/2019

The lab instructions were to construct a natural cubic spline (NCS) based on a given function for the points -8 to 8 with a constant step size of 2. Then we were to implement the natural cubic spline function via C++ code. Below I have the graph of the function f(x) = 1 / (x^2 +1) , the newton interpolant for the given points and the natural cubic spline function. We can see that the interpolant, while continuous, does not give us a very accurate representation of the original function. The NCS does give a very good approximation for our function while also being continuous. We can see this because the composite function strays very little from the original function over the x values it is evaluated at.



Items Learned:

NCS derivation

NCS implementation

C++ practice