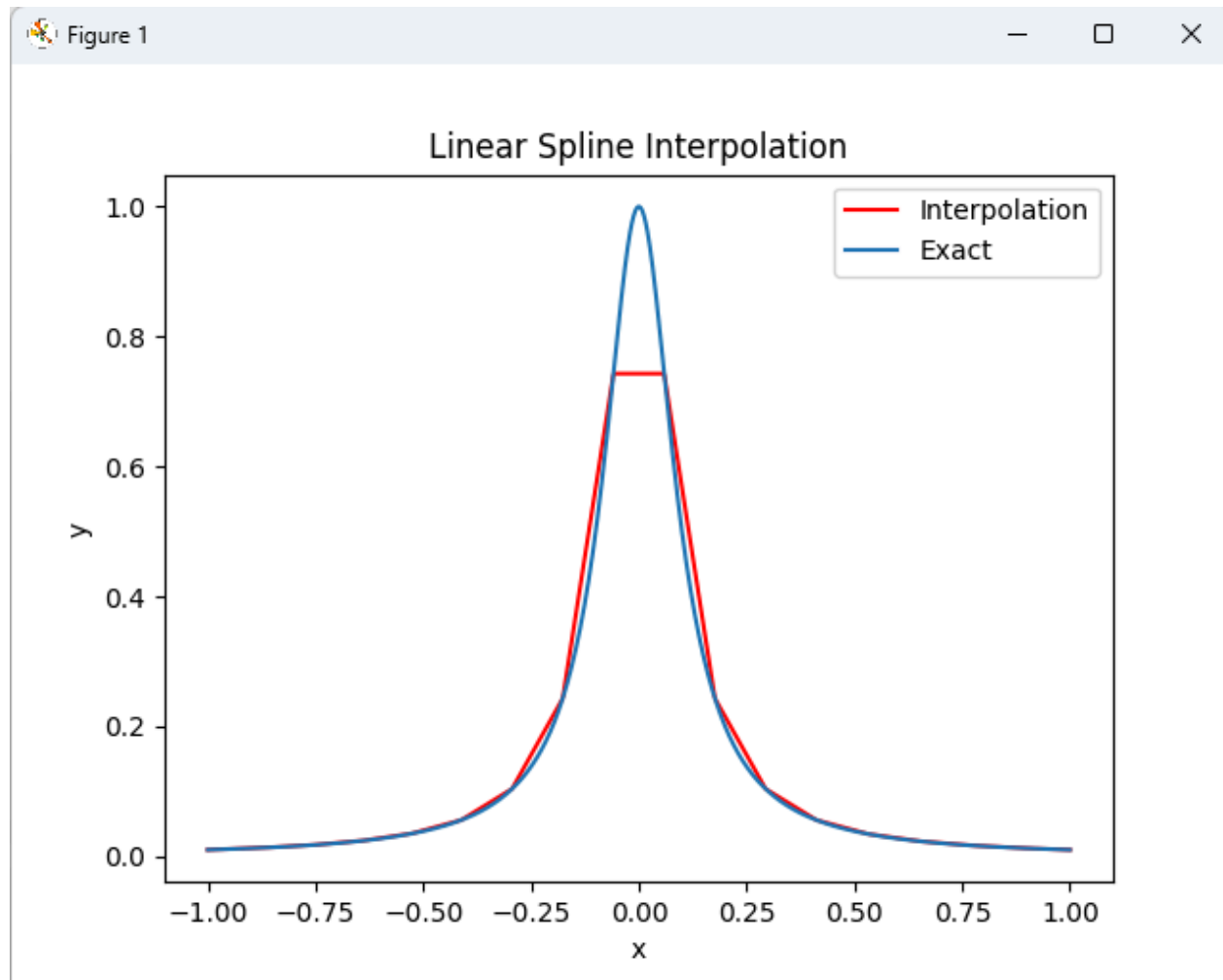# Lab 8

Derek Walker

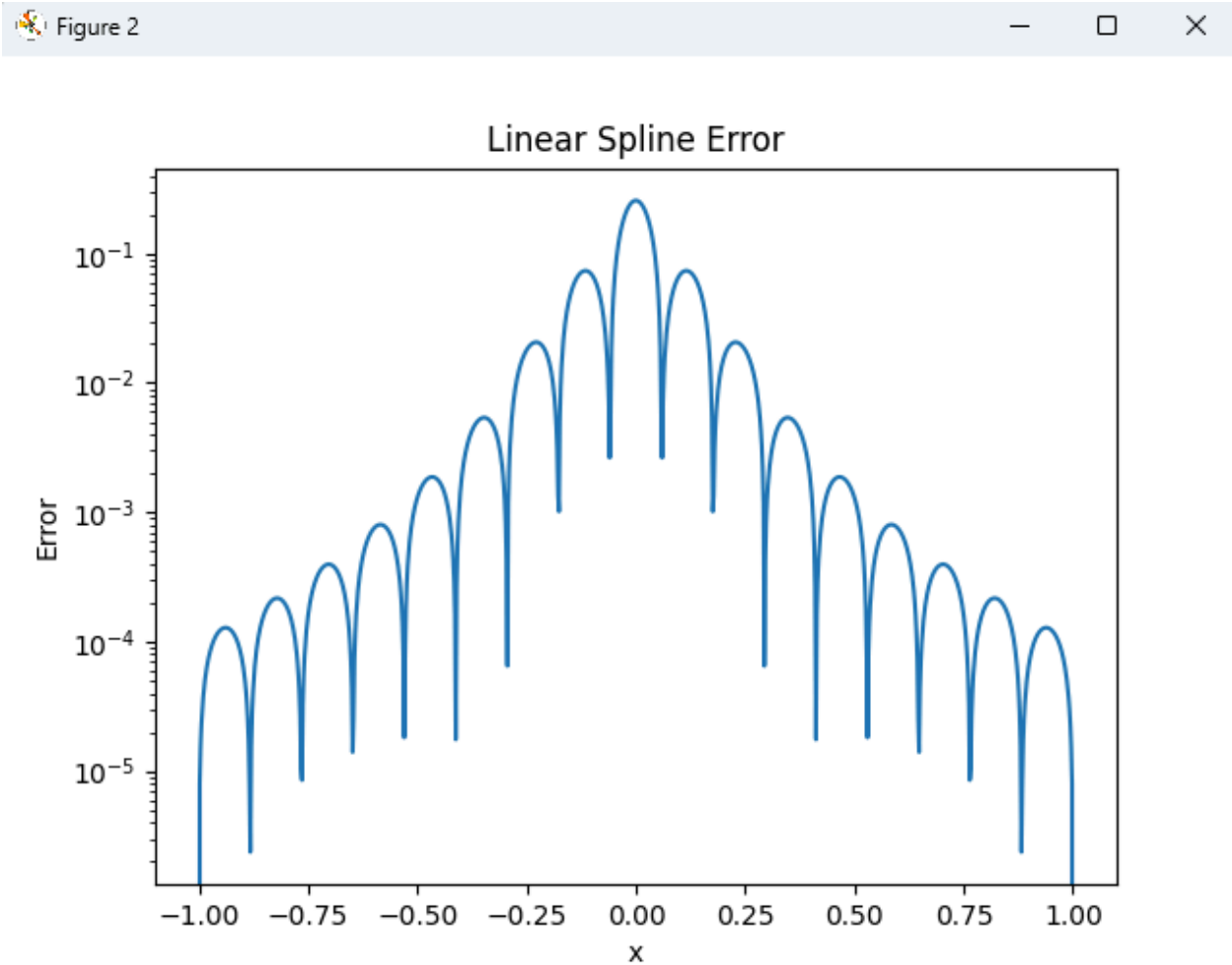*Figure 1*: Linear spline interpolation.

Figure 2 — □ ✕

Figure 2: Linear spline interpolation error. The error gets worse around x = 0.

Linear splines performed quite well. I would say it performed as well as Newton Divided Differences and Lagrange interpolation. However, it seems to perform worse around the endpoints than those two. It seems to perform slightly better than monomial expansion. I used N = 18 for these plots.
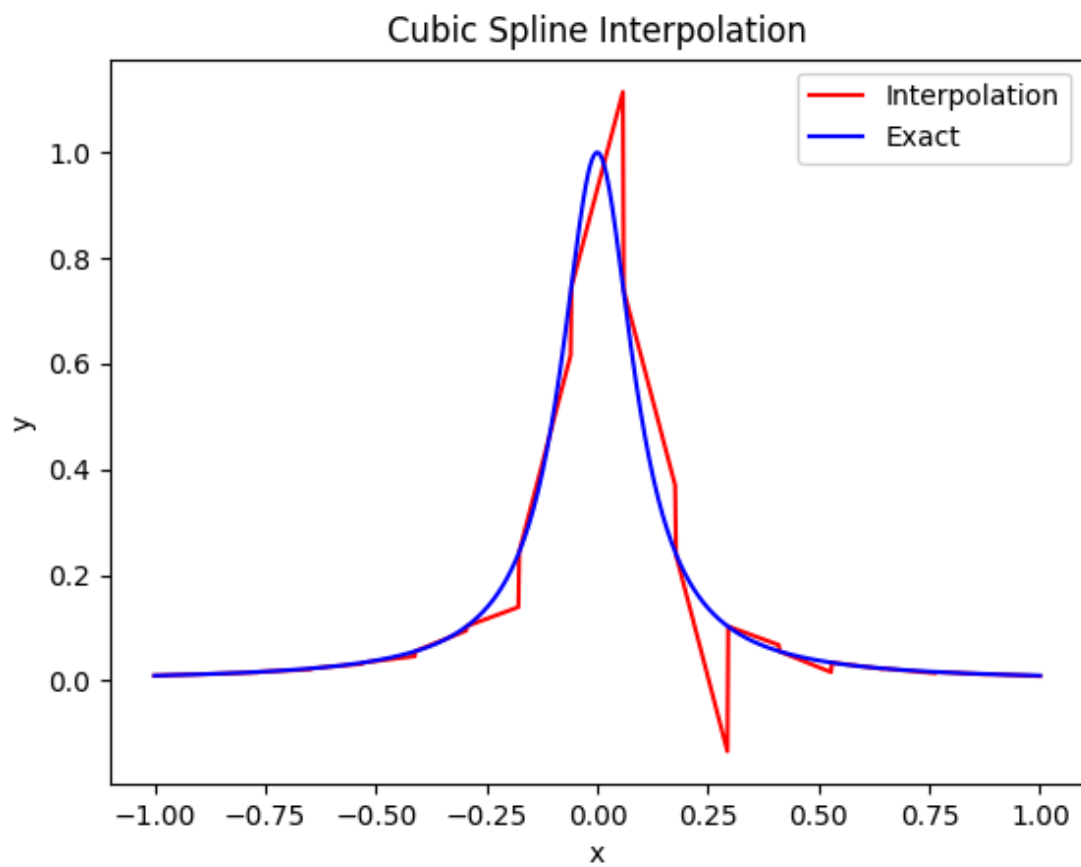
3.4:

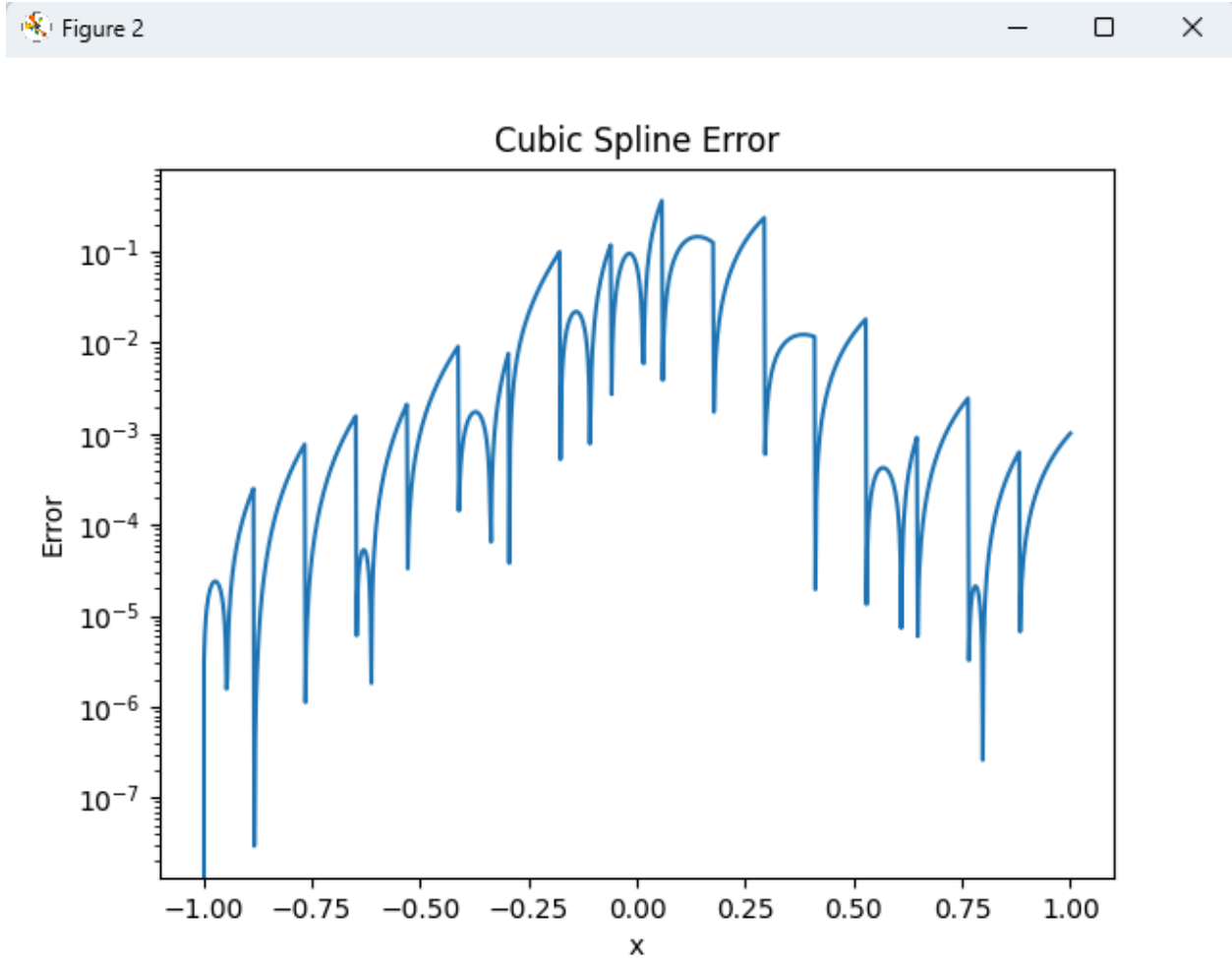*Figure 3*: Cubic spline interpolation.

Figure 2 — □ ✕

Figure 4: Cubic spline interpolation error.

It seems that each spline is still linear. I spent an hour debugging it and I couldn't figure out why. However, even though each individual spline doesn't seem to be actually cubic, the interpolation performed quite well compared to Newton and Lagrange and linear splines. It would be interesting to see cubic splines as I'm sure the error would be reduced further.