I. Using Newton's formula on $f(x) = \frac{1}{1+x^2}$

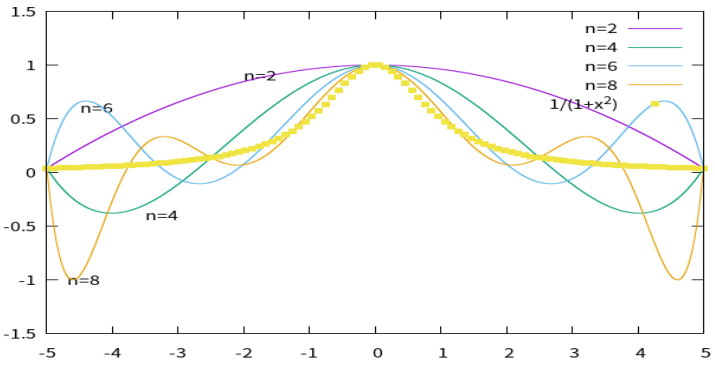

Figure 1: The Runge phenomenon.

We can find that the polynomials are not uniformly convergent to $f(x)$.

II. Perform Chebyshev interpolation for $f(x) = \frac{1}{1+25x^2}$

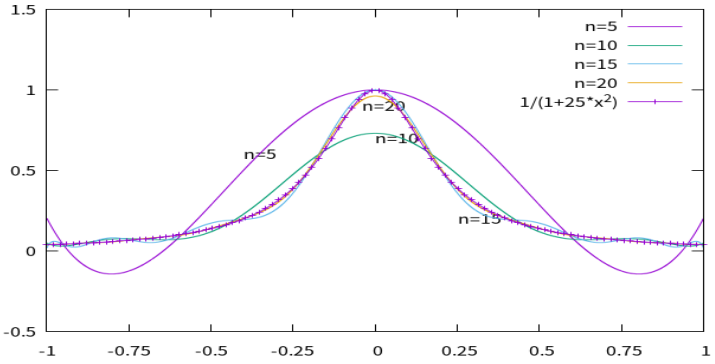

Figure 2: Chebyshev interpolation.

By using Chebyshev interpolation, the polynomials uniformly converges to $f(x)$, so it is free of the wide oscillations in section I.