Newton-Raphson is one method used to approximate the roots or zeros of functions:

\[ x_{i+1} = x_i - \frac{f(x_i)}{f'(x_i)} \]

Approximate the first derivative with the central difference formula:

\[ f'(x) = \frac{f(x + \frac{1}{2}h) - f(x - \frac{1}{2}h)}{\frac{h}{2}} \]

where \( h \) is a small quantity.
Function Plot

Simple polynomial

\[ f(x) = x^3 - 3x^2 + 1 \]