Problem 1. Slide\_disp.m returns slide displacement which along with secant.m is used in dwell\_width.m to calculate dwell width. But none of my value in secant is converging.

Problem 2.

Starting with the second-order Taylor's series approximation of f(x) around the point x = xn + δ:

Diagram

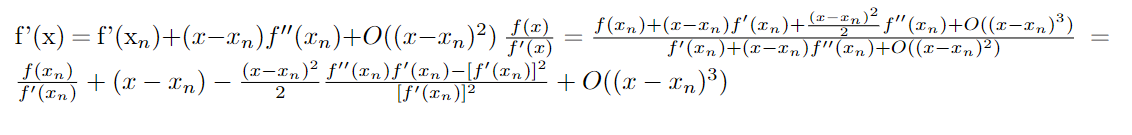
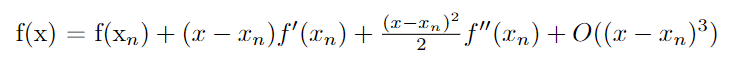
Description automatically generatedTo find the root of the equation f(x) = 0 using Halley's method, we use the following iterative formula:

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where g(x) is an approximation of f(x)/f'(x) that improves the convergence of the iteration. We can use the second-order Taylor's series to derive g(x):

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Substituting this expression for g(x) into Halley's formula, we get:

Graphical user interface, text, application, Word

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where

Chart, box and whisker chart

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