|  |
| --- |
| clear all; |
|  |  |
|  | polynomialCoefficients = [10 -2 -1 1]; |
|  | startingPoint = 2; |
|  | tolerance = 0.0001; |
|  |  |
|  | try |
|  | iterationValues = NewtonRaphson(polynomialCoefficients, startingPoint, tolerance); |
|  | PlotIterations(polynomialCoefficients, iterationValues); |
|  | numberOfIterations = length(iterationValues); |
|  | lastIterationValue = iterationValues(end); |
|  | optimumValue = Polynomial(lastIterationValue, polynomialCoefficients); |
|  | fprintf('Local optimum found after %u iterations: x=%.4f, f(x)=%.4f\n', numberOfIterations, lastIterationValue, optimumValue); |
|  | catch error |
|  | if startsWith(error.identifier, 'NewtonRaphson') |
|  | fprintf('ERROR: %s\n', error.message); |
|  | else |
|  | rethrow(error); |
|  | end |
|  | end |