Summary for Numerical Analysis

Linlin Ge

1 Solving for Nonlinear Equation Root $f(x) = 0$

1.1 Newton's Method

Advantages:

- Easy to implement

- Fast convergence

Shortcomings:

- Large amount of computation, such as $f(x), f^{'}(x)$

- Sensitive to initial value

Iterative formula:

$$x_{n+1} = x_n - \frac{f(x)}{f'(x)}$$

1.2 Bisection Method

References

[1]