

Graphical Analysis of Fixed Point Iteration

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Iteration:

$$x_{n+1} = F(x_n), n = 0, 1, 2 \dots$$

Fixed points:

Solutions of $x = F(x)$.

Definition: A fixed point of F is called

- *attracting* if $|F'(x^*)| < 1$.
- *repelling* if $|F'(x^*)| > 1$.
- *neutral* if $|F'(x^*)| = 1$.