

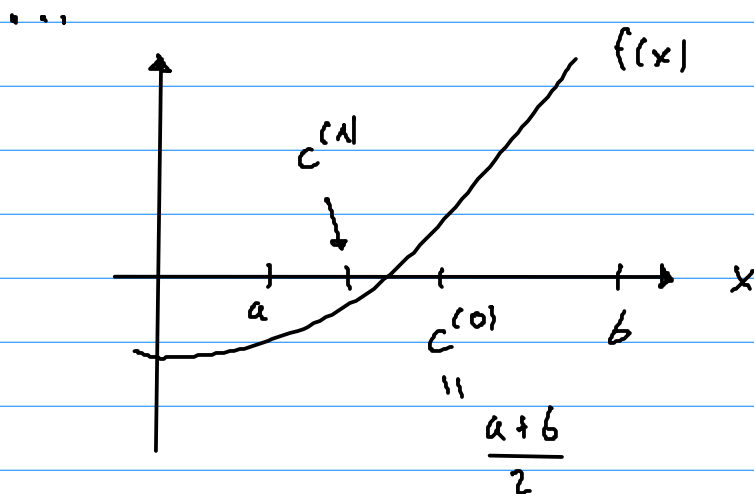
II.1.2 Bisection method

Assume: we know a, b with

$$f(a) < 0 \quad \text{and} \quad f(b) > 0$$

\leadsto root(s) bracketed

Idea: divide / bisect interval and keep subinterval fulfilling above assumption



Rem.: (i) Very easy and robust (need only f)

(ii) A priori error estimate $\epsilon^{(k)} \leq \frac{b-a}{2^{k+1}}$

(iii) Slow convergence (linear)

(iv) Not easy to generalize to systems