Bisection Method

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Abstract

The bisection method is the basic method of root finding. As cycles are conducted over period of time, each interval gets halved.

1 Introduction

Bisection Method is a straightforward method to find the numerical solution of non-linear equation.Among all the technique it is the simplest one. Separates the interval and subdivides the interval in which the root of the equation lies. The principle behind this technique is **intermediate theorem for continuous function**. But the time complexity of this theorem is very high that's why it's slow.

2 Algorithm

- Find two point, say a and b such that a¡b and g(a)*g(b)<0.
- Find the midpoint of a and b, say "h".
- h is the root of the given function if g(h)=0;else follow the next step.
- Divide the interval [a,b].
- If g(h)*g(b)<0,let a=h.
- Else if g(h)*g(a),let b=h
- Repeat above three steps until g(h)=0.

ITERATION NUMBER	ROOT LIES BE-TWEEN	VALUE OF Y	col4
1	6	73737	366
2	7	37388	377
4	3	73722	200
6	7	32838	328
9	0	19192	738