

## Bisection Method: (Solution of Algebraic & Transcendental Eq<sup>n</sup>)

This method is based on the repeated application of intermediate value property.

Let  $f(x)$  be continuous b/w  $a$  &  $b$ .

And let,

$f(a)$  be  $-ve$

&  $f(b)$  be  $+ve$

Then the approximation of the root is,

$$x_1 = \frac{a+b}{2}$$

If  $f(x_1) = 0$  then  $x_1$  is root of  $f(x) = 0$

Otherwise the root lies b/w  $a$  &  $x_1$  or  $x_1$  &  $b$ , according

as  $f(x_1)$  is  $+ve$  or  $-ve$ .

Then we bisection the interval as before & continue the process until the root is found accurately.

