**The Secant Method**

The secant method is similar to the false position method with only one difference.In the secant method,two most recent approximation to the root are used to find the new approximation instead of using only those two approximation which bound the interval containing the root.

The secant method is must faster than to false position method,but the only difficulty with secant method is that convergence is not always assured.

To describe its working assume that a and b are two initial approximation to the root.Join the points(a,f(a)) and (b,f(b)) by a straight line.The point where this line intersects the x-axis gives the next approximation to the root.Let this intersection point be m.Now b and m are taken as the starting approximations for the next iteration.The line is drawn joining the points (b,f(b)) and (m,f(m)).Let this intersection point be ‘m’.The iterative procedure terminates when the relative error in two successive approximations is less than or equal to the prescribed tolerance.

(y – y1) = ((y2 – y1)/(x2 – x1))\*(x – x1)

for (m,0)

-f(a) = ((f(b) – f(a))/(b – a))\*(m – a)

m = (af(b) – bf(a)) / ((f(b) – f(a))