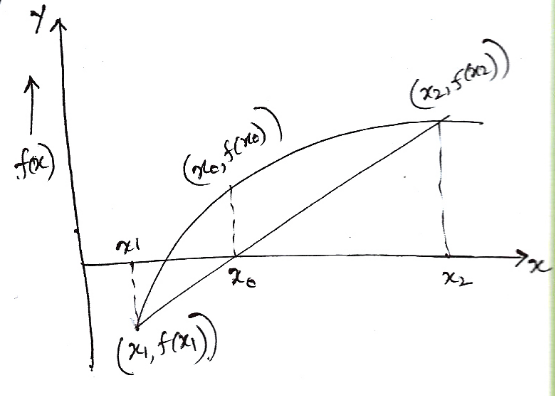
**ICT 2105: Numerical Analysis**

**False position method/Method of false position**

The Converge process in the bisection method is very slow. Because the interval between x1 and x2 is divided into two equal half and calculate the first approximate value. Actually it is used only to decide the next smaller interval. But a better approximation can be obtained by taking a straight line both the two end points. Thus the point of intersection of this line with x axis (x0) gives an improved estimate of the root and is called the false position of the root. The value of this point (x0) and its function is taking as the initial guesses.



**False position formula:**

We know that equation of the line joining the points (x1, f(x1)) and (x2, f(x2)) is given by:

**Regula falsi method / Method of false position:**

**Ex-1:** Find the positive root of by false position method.

**Solution:** let

Here,

So the root lies between 2 and 3. So, **a=2; b=3**

Now Regula falsi method:

Now from (1) we can write:

So the root lies between

From (1) we can write:

So the root lies between

From (1) we can write:

So the root lies between

From (1) we can write:

So the root lies between

From (1) we can write:

So the root lies between

From (1) we can write:

So the root lies between

From (1) we can write:

So the root lies between

From (1) we can write:

So the root lies between

**Hence the required root is**

**Exercise:**

Solve for a positive root of the following equation by using Regula Falsi Method.

