Pseudocode for finding roots of polynomials

We can also improve efficiency considerably by finding the root using a coarse increment, backing up by that increment, and finding it again at a finer increment.

In Pseudocode

Initialize the coarse increment to say .1
Set x to the starting value
Compute fx
Loop until x is > ending value
   {Set xNew to x plus the coarse increment
    Recompute fxNew
    If there is a zero crossing
       {Reduce the coarse increment by a factor of 10
        Set the xNew to the old x plus the new coarse increment
        Recompute fxNew
        Loop while 10 x Coarse increment is greater then the user specified final increment.
        {Loop while there is no zero crossing and x is less than the ending value.
        {Set x = xNew
        Set xNew to x plus the coarse increment.
        Recompute fx and fxNew
        } Decrease the coarse increment by 10
        Set xNew to x plus the coarse increment
        Recompute fxNew
        } Add x and f(x) to the root list
        Reset the coarse increment to .1
   } Add the Coarse increment to x
   Recompute fx
}