For both projects, your report should contain a quick summary of what you did and the complete code, in Matlab in principle. If you wish to use a different language, please let me know in advance.

You should preferably send me everything by email, pjabin@umd.edu. But if this is really not possible, a paper copy is acceptable.

**Program 1. Implement a trisection method.**

Implement a function

```matlab
function [c, d] = trisection[a, b, n]
```

which should return the interval \([c, d]\) obtained after \(n\) steps of the trisection method. The routine may assume that another routine is already defined for the function \(f(x)\) whose roots one is looking for.

We recall that the trisection consists in dividing an interval into 3 pieces and choose the piece where \(f\) has a change of sign.

**Program 2. Implement a modified Newton’s method.**

One defines the following modified Newton

\[
x_{k+1} = x_k - f(x_k) \frac{x_k - x_{k-1}}{f(x_k) - f(x_{k-1})},
\]

Implement a function

```matlab
function y = newton[x0, x1, n]
```

which should return the point \(y\) obtained after \(n\) steps of the previous method starting from points \(x_0 = x0\) and \(x_1 = x1\). As before the routine may assume that another routine is already defined for the function \(f(x)\) whose roots one is looking for.