HW09: Roots of Non-Linear Equations

Date Due: 11:59pm, 2015-04-22

For the problems below, you may assume that all (numeric) function input arguments are scalars.

Problem 1: (10 points) Do problem 16.4 (**myBisection**) in Siauw and Bayen.

Problem 2: (15 points) Do problem 16.5 (**myNewton**) in Siauw in Bayen. (Please ignore the two test cases on page 242 involving a function called "myNLEQ".)

Problem 3: (15 points) Re-do problem 16.4 but using the False Position Method (**myFalsePosition**). Please note that the convergence criteria will be the same as **`myBisection`**, (not **`abs(xR - xL)`**).

Test Case:

```
>> f = @(x) x.^2 - 2;
>> [R1, E1] = myFalsePosition(f, 0, 2, 1e-3)

R1 =

    1.0000    1.3333    1.4000    1.4118    1.4138    1.4141


E1 =

    1.0000    0.2222    0.0400    0.0069    0.0012    0.0002

>>
```

Deliverables: Submit the following m-files (separately, not zipped) onto Blackboard. **Be sure that the functions are named *exactly* as specified, including spelling and case**.

```
myBisection.m
myNewton.m
myFalsePosition.m
```