**Home Assignment #2**

**BISECTION METHOD**

**Task 1.** Determine the real roots of

**-** Graphically.

**-** Using three iterations of the bisection method determine the highest root. Employ initial guesses of

- Compute the estimated error *εa* and the true error *εt* after each iteration.

**Task 2.** Find the smallest positive root of the function (*x* is in radians) using the Bisection method.

-To locate the region in which the root lies, first plot this function for values of *x* between 0 and 5.

- Perform the computation until *error* falls below *εs* = 1%.

- Check your final answer by substituting it into the original function.

**Task 3.** Find the positive real root of *f (x)* = *x*4 − 8*x*3 − 35*x*2 +450*x* − 1001 using the Bisection method.

* Use initial guesses of *xl* = 4*.*5 and *xu* = 6 and performs five iterations.
* Compute both the true and approximate errors based on the fact that the root is 5.60979.
* Use a plot to proof your results and perform the computation to within *εs* = 1*.*0%.