

Assignment 1

1. Perform the Bisection method upto 50 iteration and find the value of $\sqrt{2}$. Also write your output in the table given below

Iteration	a	b	$c = \frac{a+b}{2}$	$f(a)$	$f(b)$	$f(c)$
0						
1						
2						
\vdots						
50						

2. Use the bisection method to find the root of $\cos x = xe^x$, accurate to at least 7 significant digits. Use the following stopping criterion.

- (a) Absolute error
- (b) Relative error
- (c) Functional value

	a	b	Approximate value of root	No of Iteration required
Absolute Error				
Relative Error				
Functional value				

3. Take the initial guess x_0 as a mid point of $[a, b]$ and repeat the question no. 2 for fixed point iteration method.

	a	b	x_0	Approximate value of root	No. of Iteration required
Absolute Error					
Relative Error					
Functional value					

4. Write your comments/observations regarding the above methods/results.

***** End *****