6.

On the context of coding,speed and accuracy the comparison of the methods are as follows :

1.Bisection method:

Coding :

The bisection method has an easy coding approach as we don’t have to make hard logic for

it’s formula. We also don’t have to get the derivative of the given function, which makes it easier. However, we need to inset two values and have to follow the rules.

It’s easy for the reader to read and the programmer to program.

Speed:

It is slower to get the answer as it consists of more iterations than other methods, but we get the answer for sure.

Accuracy:it has a good accuracy as the program goes through many iterations to get the answer.

2. Newton-Raphson method:

Coding:

The Newton-Raphson method is a faster way for getting the answer but, we need to check for

Initial guess if it is closer to the actual root or not which is harder to make logic of also we need to take the derivative also which lengthens the code.

It is harder for the reader to understand and harder for the program to code ans it consists of formulas and conditions.

Speed:

The Newton-Raphson method typically converges faster than other as it has a quadratic convergence rate.

Accuracy: the accuracy of this method depends on how far the root is from the initial point.

If the root is far enough, it may not converge and may converge to false values.

3. Secant method:

Coding:

The coding part of secant part is easier than Newton-Raphson method as it doesn’t need derivatives. But it has a harder formula than the bisection method. We have to give two values in this method too as a bisection method.

Speed:

It is faster than the bisection method but is slower than the Newton-Raphson method. It has superlinear convergence.

Accuracy:

It has good accuracy. Especially for smooth curves. But it is slow.

4. Fixed point iteration:

Coding:

The fixed point iteration method has the hardest coding approach as compared to other methods as we have to find the value of f(x),**Φ**(x) and **Φ**’ (x) and follow many conditions of this method.

Speed :

The speed of this method is linked with the function given itself. And careful selection of phi function.

Accuracy:

The accuracy also depends on the nature of the function.