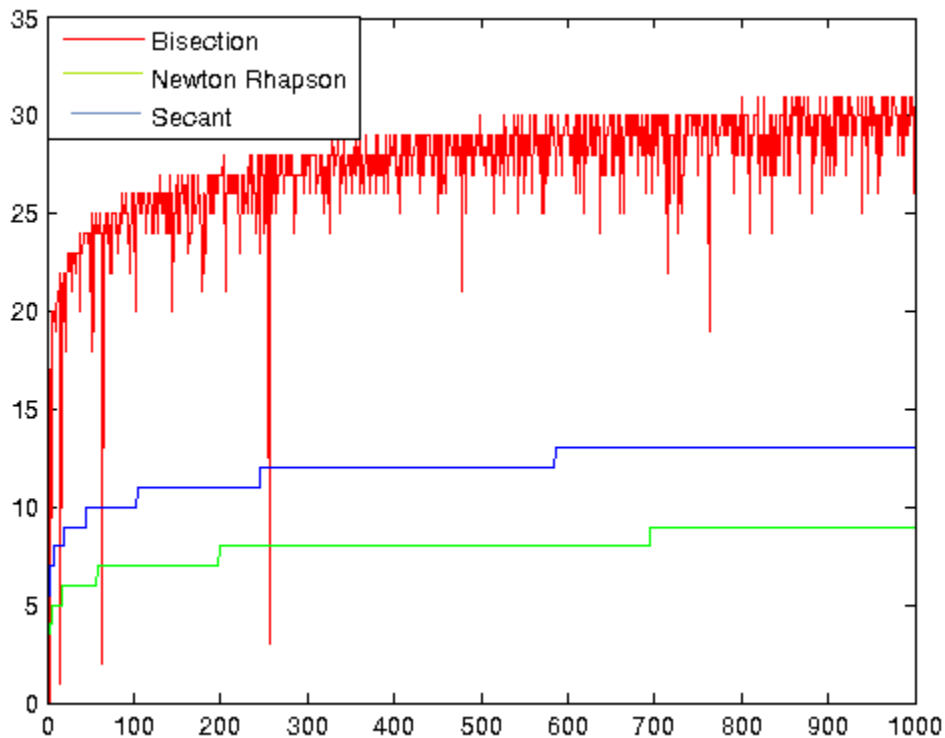


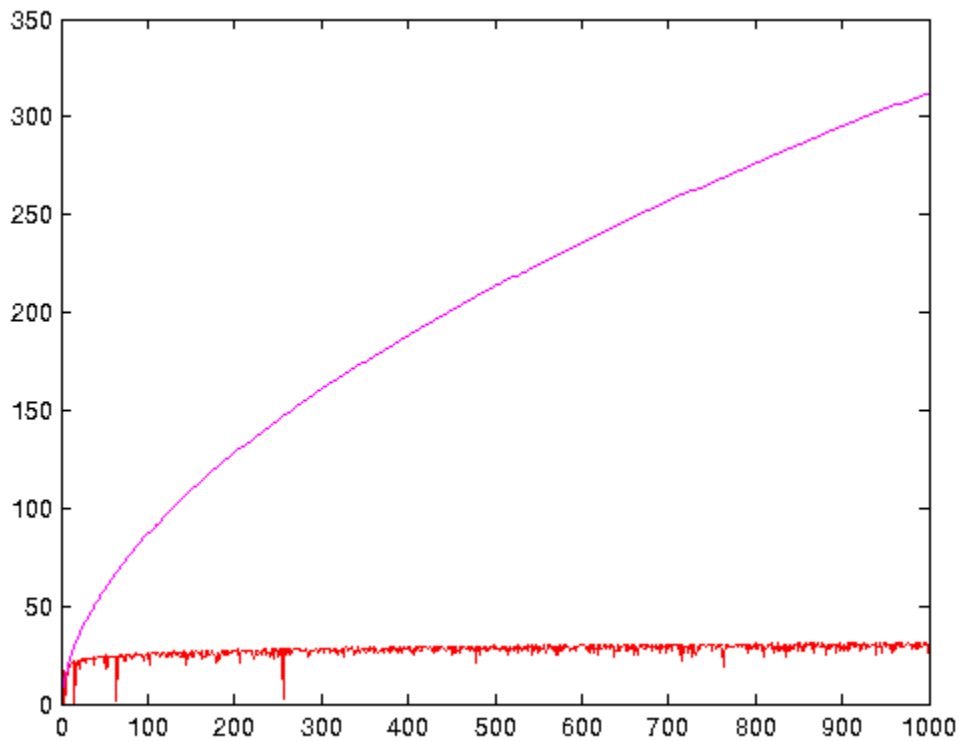
Analysis of Method Performance

The number of iterations each method took for numbers ranging from 1 to a 1000 were plotted with the help of the modules provided in the main program. The plots are available in the plots folder. Analysis of these plots yielded the following results.

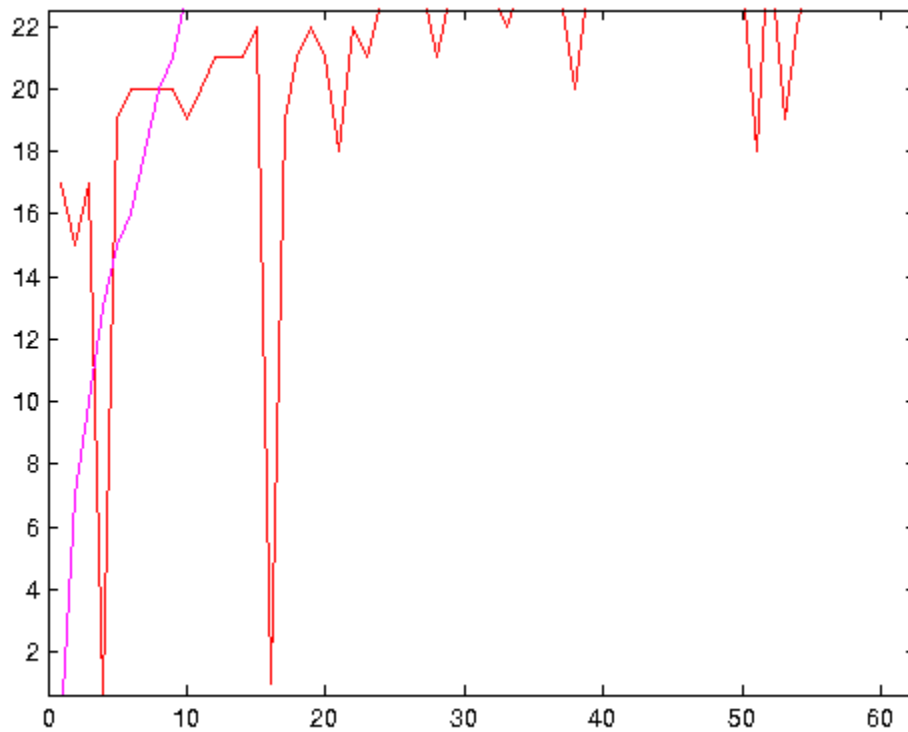
Number of Iterations for Convergence

1. Of the four methods, Newton Rhapsion method was found to be the fastest for computation of the square root of a function as illustrated by this comparison plot.
2. Apart from it, amongst the other three methods, the Secant Method was the second fastest , followed by the Bisection method and the False position method came in last as the number whose square root needed to be computed increased.
3. Following are two plots showing the results outlined above.





4. On close analysis of a separate plot of the Bisection as well as the False Position Method, it was found that for a finite set of small initial values, the False position method performed better than the Bisection method. However, this advantage quickly vanished as the Bisection method performed far well on numbers greater than 10. In fact the difference in performance went on increasing as shown on the next page.



Rate of Convergence

For all 4 methods the rate of convergence(slope of plots shown above), went on decreasing as the number whose square root needed to be computed increased.