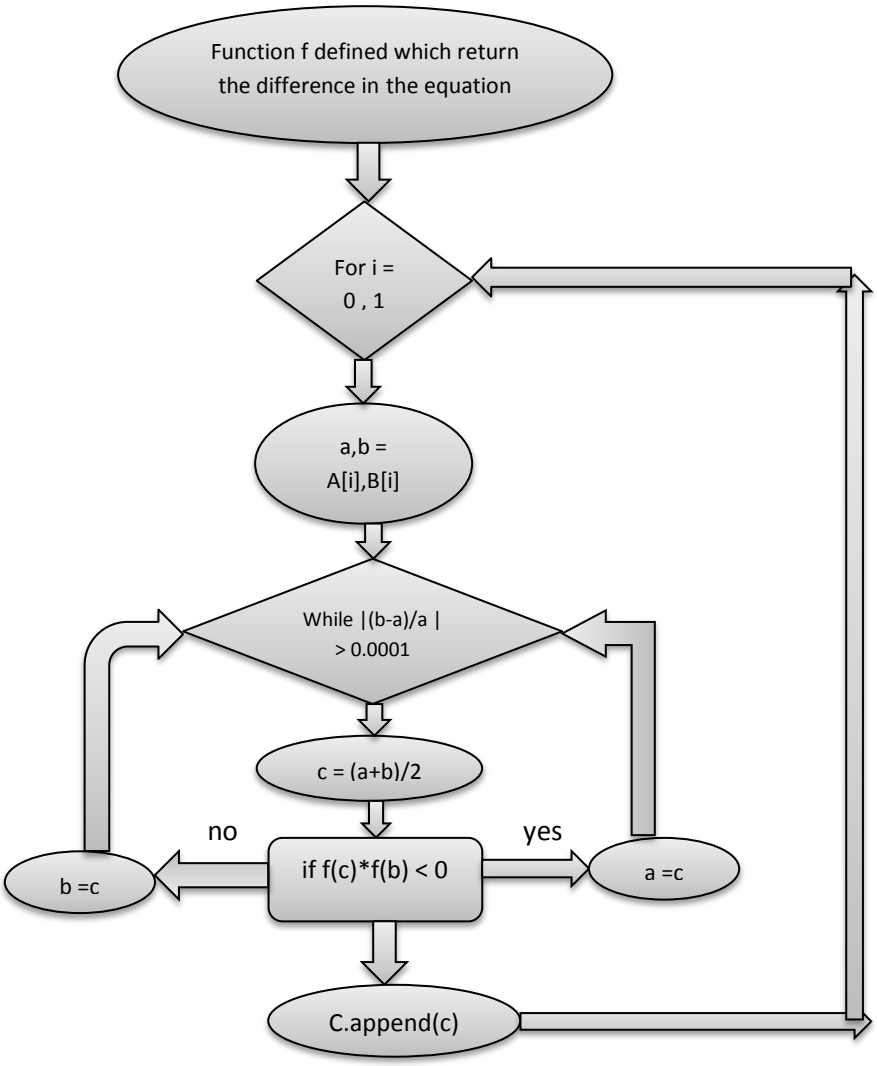
Assignment – 2

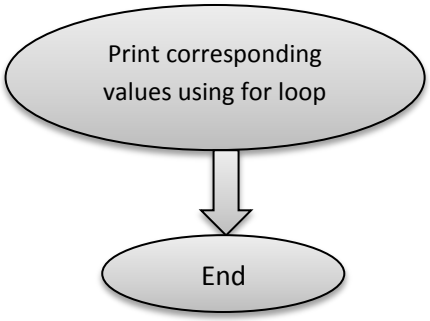
Jigar (14PH20010)

Problem : 3

Method :



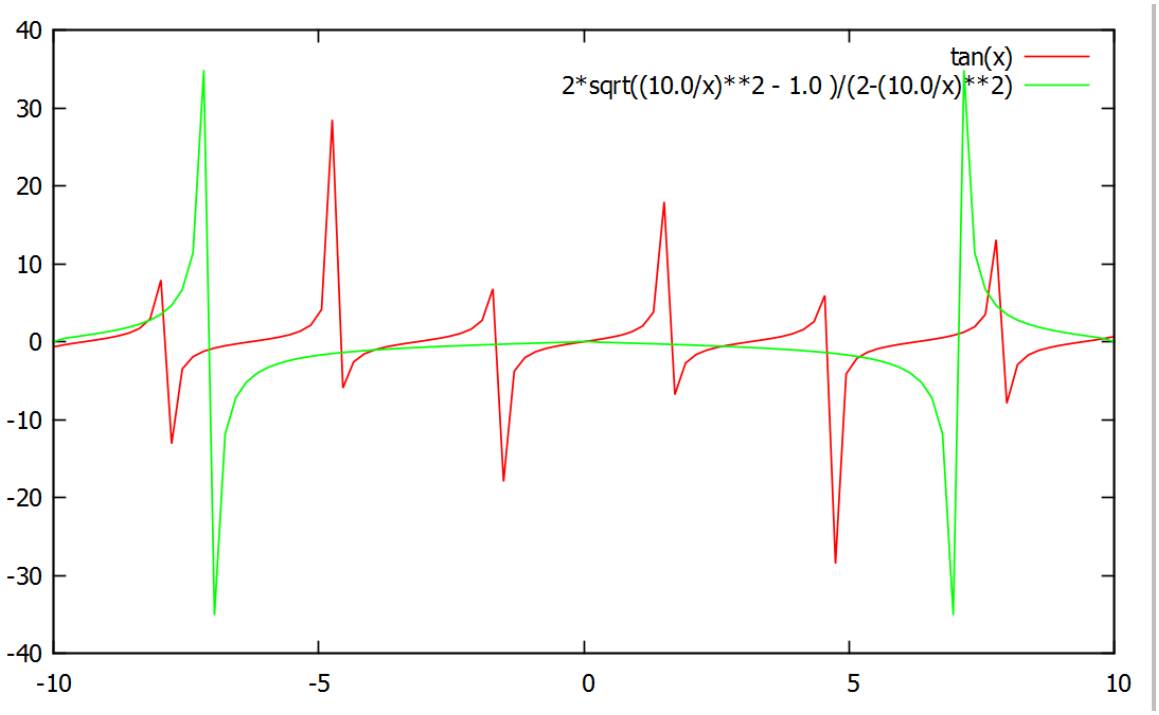
Same thing was done for a,b = -1,1.1
(the if condition is (b-a) > 0.0001)



Result :

The soltuion for z are :
1 : 2.613037109375
2 : 5.19189453125
3 : -5.187988281245771e-05
Corresponding allowed energy :
1 : -93.17203706502914
2 : -73.04423117637634
3 : -99.99999999730848

Graph :

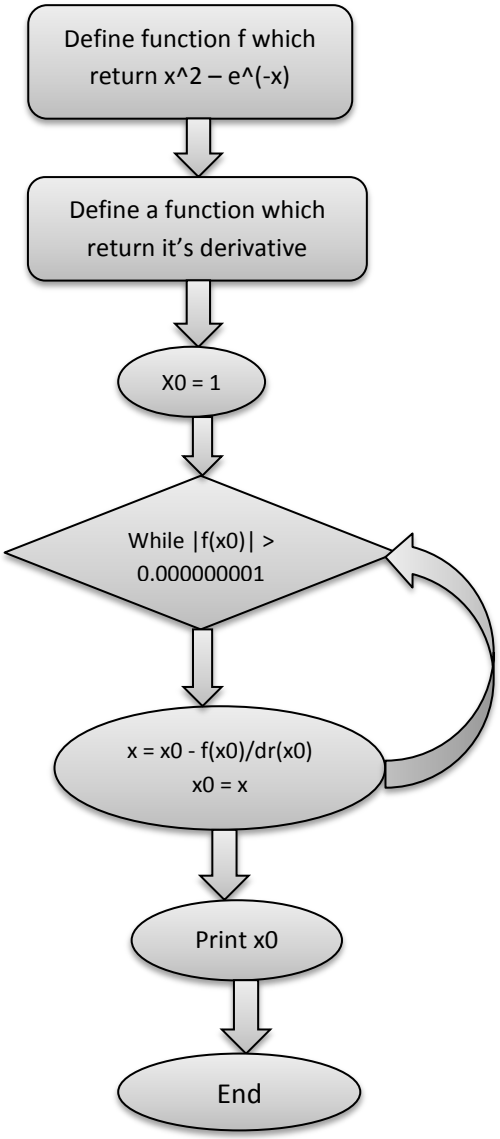


4. Discussion and Conclusion :

from the graph we had an approximate idea of roots and by using bysection method we found out precise roots and corresponding energies

Problem 4 :

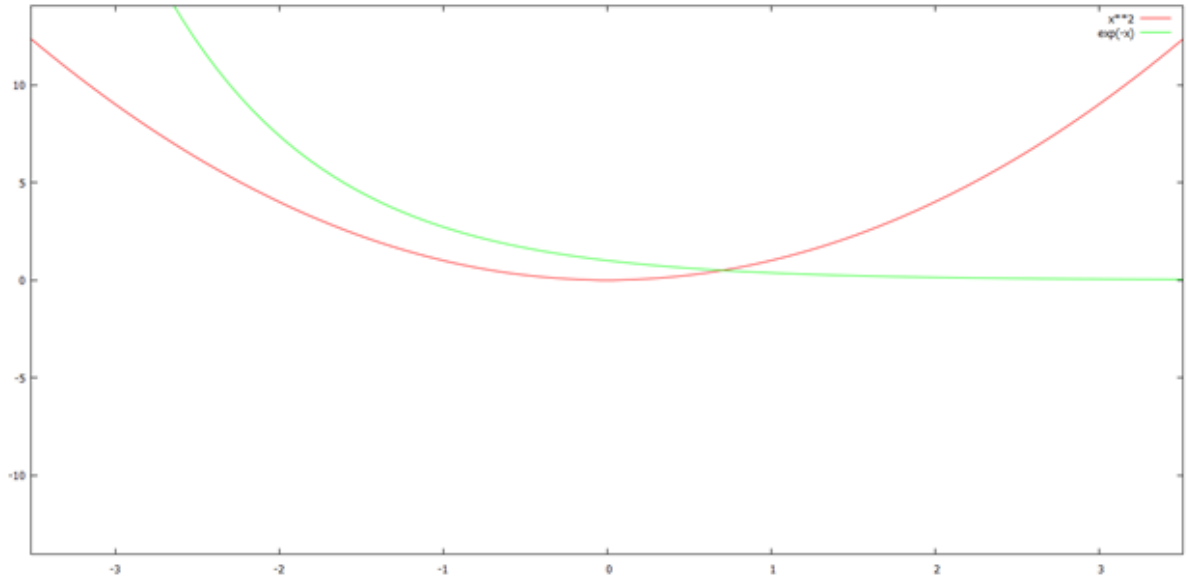
Method :



Result :

0.7330436052454454
0.703807786324133
0.7034674683317975
0.7034674224983924
The solution is : 0.7034674224983924

Graph :



Discussion and Conclusion :

by using Newton-Raphson method we found out the solution 0.7034674224983924 which is valid upto 6 digits.