

Bisection Method – Chiranjeev Kashyap

C:\Users\chira\Desktop\CBNT\bisec.exe

Input Interval: 1 3

Ite	a	b	m	f(m)	error
0	1.000000	3.000000	2.000000	-10.000000	----
1	2.000000	3.000000	2.500000	-2.375000	0.500000
2	2.500000	3.000000	2.750000	2.796875	0.250000
3	2.500000	2.750000	2.625000	0.087891	0.125000
4	2.500000	2.625000	2.562500	-1.173584	0.062500
5	2.562500	2.625000	2.593750	-0.550446	0.031250
6	2.593750	2.625000	2.609375	-0.233189	0.015625
7	2.609375	2.625000	2.617188	-0.073128	0.007813
8	2.617188	2.625000	2.621094	0.007261	0.003906
9	2.617188	2.621094	2.619141	-0.032963	0.001953
10	2.619141	2.621094	2.620117	-0.012859	0.000977
11	2.620117	2.621094	2.620605	-0.002802	0.000488
12	2.620605	2.621094	2.620850	0.002230	0.000244
13	2.620605	2.620850	2.620728	-0.000286	0.000122
14	2.620728	2.620850	2.620789	0.000973	0.000061
15	2.620728	2.620789	2.620758	0.000343	0.000031

Approximate Root is 2.620758

Process returned 0 (0x0) execution time : 5.174 s

Press any key to continue.



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Regula Falsi Method – Chiranjeev Kashyap

C:\Users\chira\Desktop\CBNT\falsi.exe

Input Interval: 1 3

Ite	a	b	c	f(c)	error
0	1.000000	3.000000	2.307692	-5.710514	----
1	2.307692	3.000000	2.576441	-0.897459	0.268749
2	2.576441	3.000000	2.614847	-0.121172	0.038406
3	2.614847	3.000000	2.619964	-0.016010	0.005117
4	2.619964	3.000000	2.620639	-0.002108	0.000675
5	2.620639	3.000000	2.620728	-0.000275	0.000089
6	2.620728	3.000000	2.620739	-0.000040	0.000011

Root is 2.620739

Process returned 0 (0x0) execution time : 2.943 s

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Newton Raphson Method – Chiranjeev Kashyap

C:\Users\chira\Desktop\CBNT\raphson.exe

Input the approximation : 2

Ite	X0	X1	Error	Order
1	2.000000	2.833333	0.833333	-----
2	2.833333	2.636294	0.197040	8.909258
3	2.636294	2.620833	0.015461	2.566843

Root is 2.620833

Process returned 0 (0x0) execution time : 2.189 s

Press any key to continue.



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Secant Method – Chiranjeev Kashyap

"D:\College Files\Numerical Method Implementation\04 Secant MTHD.exe"

Enter the accuracy desired:

0.001

Enter the intial guesses:

x1 = 0

x2 = 5

Enter the max number of iterations to be performed: 10

iter	x1	x2	x3	f(x3)
1	0.000000	5.000000	0.800000	-3.360000
2	5.000000	0.800000	1.379310	-2.097503
3	0.800000	1.379310	2.341772	1.483897
4	1.379310	2.341772	1.942991	-0.224785
5	2.341772	1.942991	1.995453	-0.018168
6	1.942991	1.995453	2.000066	0.000263

One of the roots is: 2.000066

Process returned 0 (0x0) execution time : 6.610 s

Press any key to continue.



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Gauss Elimination Method – Chiranjeev Kashyap

"D:\College Files\Numerical Method Implementation\05 Gauss Elimination.exe"

Enter number of unknowns: 3

```
a[1][1] = 1
a[1][2] = 1
a[1][3] = 1
a[1][4] = 9
a[2][1] = 2
a[2][2] = -3
a[2][3] = 4
a[2][4] = 13
a[3][1] = 3
a[3][2] = 4
a[3][3] = 5
a[3][4] = 40
```

Solution:

```
x[1] = 1.000
x[2] = 3.000
x[3] = 5.000
```



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Gauss Seidal Method – Chiranjeev Kashyap

"D:\College Files\Numerical Method Implementation\06 Gauss Seidal.exe"

Enter tolerable error:

0.0001

Count	x	y	z
1	0.8500	-1.0275	1.0109
2	1.0025	-0.9998	0.9998
3	1.0000	-1.0000	1.0000
4	1.0000	-1.0000	1.0000

Solution: $x=1.000$, $y=-1.000$ and $z = 1.000$

Process returned 0 (0x0) execution time : 42.272 s

Press any key to continue.



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Newton Backward Method – Chiranjeev Kashyap

"D:\College Files\Numerical Method Implementation\07 Newton Backward.exe"

4

Enter data:

x[0]=0

y[0]=1

x[1]=1

y[1]=2

x[2]=2

y[2]=1

x[3]=3

y[3]=10

BACKWARD DIFFERENCE TABLE

0.00 1.00

1.00 2.00 1.00

2.00 1.00 -1.00 -2.00

3.00 10.00 9.00 10.00 12.00

Process returned 0 (0x0) execution time : 54.132 s

Press any key to continue.



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Newton Forward Method – Chiranjeev Kashyap

"D:\College Files\Numerical Method Implementation\01 08 Newton Forward.exe"

Enter number of data: 5

Enter data:

x[0]=40

y[0]=31

x[1]=50

y[1]=73

x[2]=60

y[2]=124

x[3]=70

y[3]=159

x[4]=80

y[4]=190

FORWARD DIFFERENCE TABLE

40.00	31.00	42.00	9.00	-25.00	37.00
-------	-------	-------	------	--------	-------

50.00	73.00	51.00	-16.00	12.00	
-------	-------	-------	--------	-------	--

60.00	124.00	35.00	-4.00		
-------	--------	-------	-------	--	--

70.00	159.00	31.00			
-------	--------	-------	--	--	--

80.00	190.00				
-------	--------	--	--	--	--

Process returned 0 (0x0) execution time : 48.537 s

Press any key to continue.



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Newton divide difference formula Method – Chiranjeev Kashyap

"D:\College Files\Numerical Method Implementation\09 Newton divide difference formula.exe"

Enter the number of observations: 5

Enter the different values of x:

5 7 11 13 17

The corresponding values of y are:

150 392 1452 2366 5202

Enter the value of 'k' in $f(k)$ you want to evaluate: 9

$f(9) = 810$



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LaGrange's Interpolation Method – Chiranjeev Kashyap

"D:\College Files\Numerical Method Implementation\10 Labrange's Interpolation.exe"

Enter number of data: 5

Enter data:

x[1] = 5

y[1] = 150

x[2] = 7

y[2] = 392

x[3] = 11

y[3] = 1452

x[4] = 13

y[4] = 2366

x[5] = 17

y[5] = 5202

Enter interpolation point: 9

Interpolated value at 9.000 is 810.000.

Process returned 13 (0xD) execution time : 46.932 s

Press any key to continue.



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