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| xi. |  |  |
| xii. |  |  |

Output :

1.

## Find the Sum of all the Even or Odd numbers from the first n Natural Numbers ##

Please enter the last natural number : 10

Which type of numbers (Even/Odd) do you want to calculate the sum from first 10 Natural numbers? (even/odd)

Answer : even

Sum of all the even numbers from the first 10 Natural Numbers is : 30

Average of all the even numbers (5 numbers) from the first 10 Natural Numbers is : 6

2.

## Find the Sum of all the Even or Odd numbers from the first n Natural Numbers ##

Please enter the last natural number : 43

Which type of numbers (Even/Odd) do you want to calculate the sum from first 43 Natural numbers? (even/odd)

Answer : odd

Sum of all the odd numbers from the first 43 Natural Numbers is : 484

Average of all the odd numbers (22 numbers) from the first 43 Natural Numbers is : 22

Output :

## Find the greatest number and its postition from a given set of numbers ##

How many numbers are there?

>>11

Enter the 1th Number >>-54

Enter the 2th Number >>56

Enter the 3th Number >>12

Enter the 4th Number >>-9

Enter the 5th Number >>9

Enter the 6th Number >>15

Enter the 7th Number >>62

Enter the 8th Number >>-8

Enter the 9th Number >>0

Enter the 10th Number >>3

Enter the 11th Number >>4

The Greatest number is :: 62.000000 and it's at the 7th Position

Output :

####### This Program is to solve a equation by Bisection Method #######

Please enter Tolerance : .00001

Enter the lower bound of the solution :: 1

Enter the upper bound of the solution :: 5

Solution doesn't exists in the domain (1.000000,5.000000)

Enter the lower bound of the solution :: -8

Enter the upper bound of the solution :: 5

Solution of the Polynomial equation is :: -1.000001

Number of Iteration :: 22

Output :

####### This Program is to solve a equation by Newton-Rhapson Method #######

Please enter Tolerance : .00001

Enter the initial approximation of the solution :: 21

Solution of the Polynomial equation is :: -1.000001

Number of Iteration :: 23

Output :

####### This Program is to solve a equation by Secant Method #######

Please enter Tolerance : .001

Enter the lower bound of the solution :: -8

Enter the upper bound of the solution :: 9

Solution of the Polynomial equation is :: -0.999981

Numbner of Iteration :: 188

Output :

## Numerical Integration using Trapezoidal Rule ##

Please enter the lower limit of x : 0

Please enter the uppper limit of x : 1

Please enter the total number of sections :999

Area between (0.000000,1.000000) is : 0.784897

Output :

## Numerical Integration using Simpson's Rule ##

Please enter the lower limit of x : 0

Please enter the uppper limit of x : 1

Area of the curve under (0.000000,1.000000) is :: 0.783333

Output :

## Solving first ordinary differential equation by using Eular's Method ##

Please Enter the ititial value conditions

Initial valu of x >>0

Initial value of y at x=0.000000 >>3

Please Enter the Final value of x

>>9

Please Enter the step size >>.0001

Solution for y at x=9.000046 is :: 740.148132

Output :

Output :

## Finding the Velocity and Accleration from a given set of data of Position and Time by using Forward Difference Numerical Differentiation ##

Please enter the total number of datasets :10

Time Position

-------------- --------------

t[1] = 0

r[1] = 0

t[2] = 1

r[2] = 1

t[3] = 2

r[3] = 4

t[4] = 3

r[4] = 9

t[5] = 4

r[5] = 16

t[6] = 5

r[6] = 25

t[7] = 6

r[7] = 36

t[8] = 7

r[8] = 49

t[9] = 8

r[9] = 64

t[10] = 9

r[10] = 81

Time Position Velocity Accleration

----------- ------------- ------------ -------------

0.000000 0.000000 1.000000 2.000000

1.000000 1.000000 3.000000 2.000000

2.000000 4.000000 5.000000 2.000000

3.000000 9.000000 7.000000 2.000000

4.000000 16.000000 9.000000 2.000000

5.000000 25.000000 11.000000 2.000000

6.000000 36.000000 13.000000 2.000000

7.000000 49.000000 15.000000

8.000000 64.000000

Output :

## Finding the Velocity and Accleration from a given set of data of Position and Time by using Backward Difference Numerical Differentiation ##

Please enter the total number of datasets :10

Time Position

-------------- --------------

t[1] = 0

r[1] = 0

t[2] = 1

r[2] = 2

t[3] = 2

r[3] = 4

t[4] = 3

r[4] = 9

t[5] = 4

r[5] = 16

t[6] = 5

r[6] = 25

t[7] = 6

r[7] = 36

t[8] = 7

r[8] = 37

t[9] = 8

r[9] = 64

t[10] = 9

r[10] = 81

Time Position Velocity Accleration

----------- ------------- ------------ -------------

0.000000 0.000000

1.000000 2.000000 2.000000

2.000000 4.000000 2.000000 -0.000000

3.000000 9.000000 5.000000 3.000000

4.000000 16.000000 7.000000 2.000000

5.000000 25.000000 9.000000 2.000000

6.000000 36.000000 11.000000 2.000000

7.000000 37.000000 1.000000 -10.000000

8.000000 64.000000 27.000000 26.000000