Input:

f(x): $e^x * \sqrt{\sin(x) + \ln(x)}$

h = 0.01

Output:

```
Enter the point(x) at which derivatives are required: 6.3
Enter the value of h: 0.01
The first and second derivitives at x: 6.3 are 973.688 and 1123.63
Do you want to input another values?(y/n): n

c:\Users\Dell\Desktop\Roshan NM\Unit 3>
```

Input:

f(x) = $x^2 * e^x + \sin(x)$

h = 0.01

Output:

```
Enter the point(x) at which derivatives are required: 1
Enter the value of h: 0.01
The first and second derivitives at x: 1 are 8.69571 and 18.1896
Do you want to input another values?(y/n): n

c:\Users\Dell\Desktop\Roshan NM\Unit 3>
```

Input:

x	2	3	5	6
f(x)	3	**7**	21	31

Derivative at(**x**) : 4.1

Output:

```
Input number of data points: 4
Input values of x and f(x) one set of each line:
x[0]: 2
f[0]: 3
x[1]: 3
f[1]: 7
x[2]: 5
f[2]: 21
x[3]: 6
f[3]: 31
Input x where derivative is required: 4.1
The Derivative at x: 4.1 is 13.71
Do you want to input another value?(y/n): n

c:\Users\Dell\Desktop\Roshan NM\Unit 3>
```

Input:

x	5	7	11	13	17
f(x)	150	392	1452	2366	5202

Derivative at(**x**) : 9

Output:

```
Input number of data points: 5
Input values of x and f(x) one set of each line:
x[0]: 5
f[0]: 150
x[1]: 7
f[1]: 392
x[2]: 11
f[2]: 1452
x[3]: 13
f[3]: 2366
x[4]: 17
f[4]: 5202
Input x where derivative is required: 9
The Derivative at x: 9 is 810
Do you want to input another value?(y/n):
```

Input

Given: $\int_0^2 e^{-x}\,dx$

x	0	0.5	1	1.5	2
f(x)	1	0.6064	0.3676	0.2231	0.1353

Output:

```
Enter lower limit of integration: 0
Enter upper limit of intergration: 2
Enter number of segments n (Even number): 4
Integration between 0 and 2 when h:0.5 is: 0.864956
c:\Users\Dell\Desktop\Roshan NM\Unit 3>
```

Input:

Given: $\int_0^1 \frac{1}{1+x^2}\,dx$

f(x)	0	0.25	0.5	0.75	1
x	1	0.94117	0.8	0.64	0.5

Output:

```
Enter lower limit of integration: 0
Enter upper limit of intergration: 1
Enter number of segments n (Even number): 4
Integration between 0 and 1 when h:0.25 is: 0.785392
c:\Users\Dell\Desktop\Roshan NM\Unit 3>
```

Input:

Given: $\int_0^1 \frac{2}{1+x^3}\ dx$

f(x)	0	0.166667	0.33333	0.5	0.66667	0.83333	1
x	2	1.99	1.92	1.78	1.54	1.26	1

Output:

```
Enter lower limit of integration: 0
Enter upper limit of intergration: 1
Enter number of segments n(divisible by 3): 6
Intergration between 0 and 1 when h:0.166667 is 1.67142
c:\Users\Dell\Desktop\Roshan NM\Unit 3>
```

Input:

Given: $\int_1^4 x^3\ dx$

f(x)	1	2	3	4
x	1	8	27	64

Output:

```
Enter lower limit of integration: 1
Enter upper limit of intergration: 4
Enter number of segments n(divisible by 3): 3
Intergration between 1 and 4 when h:1 is 63.75
c:\Users\Dell\Desktop\Roshan NM\Unit 3>
```

Input:

Given: $\int_0^1 \frac{1}{1+x^2}\, dx$

f(x)	0	1	2	3	4	5	6
x	1	0.5	0.2	0.1	0.0588	0.0385	0.027

Output:

```
Enter lower limit of integration a: 0
Enter upper limit of intergration b: 1
Give the segment width n: 6
6Integration between 0 and 1 when h:0.166667 is 1.33796
c:\Users\Dell\Desktop\Roshan NM\Unit 3>
```

Input:

I = $\int_0^2 x^2 + 1\, dx$

f(x)	0	0.5	1	1.5	2
x	1	1.25	2	3.25	5

Output:

```
Enter lower limit of integration a: 0
Enter upper limit of intergration b: 2
Give the segment width n: 4
Integration between 0 and 2 when h:0.5 is 4.75
c:\Users\Dell\Desktop\Roshan NM\Unit 3>
```