

```

PS D:\computer_suff\College\Maths_Ass\SEM4>
uter suff\College\Maths_Ass\SEM4\" ; if ($?
k.c -o 5b_rk } ; if ($?) { .\5b_rk }
The value of y at x = 0.200000 is: 1.273563
PS D:\computer_suff\College\Maths_Ass\SEM4>

```

```

{ .\1b_langranges }
Enter the number of data points: 4
Enter the data points in the format (x y):
35 1175
35.5 1280
39.5 2180
40.5 2420
Enter the point at which you want to interpolate: 40
Interpolated value at 40.000000 is: 2299.318182

```

```

suff\College\Maths_Ass\SEM4\" ; if ($?
od.c -o 5a_eulermethod }

x      y
0.00   1.000000
0.10   1.110000
0.20   1.242050
0.30   1.398465
0.40   1.581804
0.50   1.794894
0.60   2.040857
0.70   2.323147
0.80   2.645578
0.90   3.012364
1.00   3.428162
1.10   3.898119

```

```

suff\College\Maths_Ass\SEM4\" ; if ($?
o 5c_milne } ; if ($?) { .\5c_milne
x      y (Milne's Method)
0.00000 1.00000
0.10000 0.81942
0.20000 0.69224
0.30000 0.60829
0.40000 0.55933
0.50000 0.53873
0.60000 0.54107
0.70000 0.56200
0.80000 0.59797
0.90000 0.64613
1.00000 0.70415
1.10000 0.77016
PS D:\computer_suff\College\Maths_Ass\SEM4>

```

```
f\College\Maths_Ass\SEM4\" ; if ($?) { gcc 6a_sine-cosine } ; if ($?) { .\6a_sine-cosine }
Enter the angle in degrees: 70
Enter the number of terms: 7
Sine of 70.00 degrees using 7 terms is: 0.939693
Cosine of 70.00 degrees using 7 terms is: 0.342020
PS D:\computer_suff\College\Maths_Ass\SEM4>
```

```
f\College\Maths_Ass\SEM4\" ; if ($?) { gcc 6b_matrixmultiply } ; if ($?) { .\6b_matrixmultiply }
Resultant matrix after multiplication:
30      24      18
84      69      54
138     114     90
PS D:\computer_suff\College\Maths_Ass\SEM4>
```

```
suff\College\Maths_Ass\SEM4\" ; if ($?) { gcc 4e_marksheet } ; if ($?) { .\4e_marksheet }
Enter student name: firoz
Enter marks for each subject:
Subject 1: 69
Subject 2: 96
Subject 3: 71
Subject 4: 82
Subject 5: 100
```

```
Student Name: firoz
Marks Obtained:
Subject 1: 69
Subject 2: 96
Subject 3: 71
Subject 4: 82
Subject 5: 100
Total Marks: 418.00/500
Percentage: 83.60%
Grade: B
```

```
suff\College\Maths_Ass\SEM4\" ; if ($?) { gcc 4e_marksheet } ; if ($?) { .\4e_marksheet }
Enter student name: Harshit
Enter marks for each subject:
Subject 1: 85
Subject 2: 73
Subject 3: 96
Subject 4: 65
Subject 5: 99
```

```
Student Name: Harshit
Marks Obtained:
Subject 1: 85
Subject 2: 73
Subject 3: 96
Subject 4: 65
Subject 5: 99
Total Marks: 418.00/500
Percentage: 83.60%
Grade: B
```



```
suff\College\Maths_Ass
```

```
.c -o 4b_gaussjordan
```

```
Solution:
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```
x1 = -2.17
```

```
x2 = 2.74
```

```
x3 = 1.22
```

```
x4 = 0.52
```

```
PS D:\computer_suff\C
```

```
\College\Maths_Ass\SEM4\" ; if
```

```
3b_newton_raphson } ; if ($?)
```

```
Enter initial guess: 2
```

```
Root of the equation: 1.512137
```

```
PS D:\computer_suff\C
```

```
suff\College\Maths_Ass  
.c -o 4c_gaussidel
```

```
x[1] = 2.000000
```

```
x[2] = 1.500000
```

```
x[3] = 0.750000
```

```
x[1] = 1.550000
```

```
x[2] = 1.650000
```

```
x[3] = 0.900000
```

```
x[1] = 1.490000
```

```
x[2] = 1.657500
```

```
x[3] = 0.926250
```

```
x[1] = 1.483250
```

```
x[2] = 1.656000
```

```
x[3] = 0.930375
```

```
x[1] = 1.482725
```

```
x[2] = 1.655362
```

```
x[3] = 0.930956
```

```
\College\Maths_Ass\SEM4\" ; if ($?) {
```

```
ausselim } ; if ($?) { .\4a_gausselim
```

```
Solution:
```

```
x[0] = 0.375124
```

```
x[1] = 0.289395
```

```
x[2] = 0.269078
```

```
PS D:\computer_suff\College\Maths_Ass\
```

```

PS D:\computer suff\College\Maths_Ass\SEM4> cd "d:\computer
\College\Maths_Ass\SEM4\" ; if ($?) { gcc 2_numeric_integral
o 2_numeric_integral } ; if ($?) { .\2_numeric_integral }
Enter the lower and upper limit of integration (a b) : 0 1
Enter the number of intervals (n): 5
Trapezoidal rule result: 0.783732
Simpson's 1/3 rule result: 0.748732
Simpson's 3/8 rule result: 0.770301
Boole's rule result: 0.743823
Weddle's rule result: 0.731477
PS D:\computer suff\College\Maths_Ass\SEM4> █

```

```

PS D:\computer suff\College\Maths_Ass\SEM4> cd
College\Maths_Ass\SEM4\" ; if ($?) { gcc 3a_bis
i.c -o 3a_bisection__regulafalsi } ; if ($?) {
gulafalsi }
Enter interval [a, b]: 2 3
Root of the equation by bisection: 2.500000
Root of the equation by regula falsi: 2.500000
PS D:\computer suff\College\Maths_Ass\SEM4> █

```

```

Enter no of data points5
Enter the point at which you want to interpolate: 82

```

The forward difference table is:

5026.0	648.0	40.0	-2.0	4.0
5674.0	688.0	38.0	2.0	
6362.0	726.0	40.0		
7088.0	766.0			
7854.0				

Newton's Forward Interpolation at x = 82.0: 5280.11

The backward difference table is:

5026.0				
5674.0	648.0			
6362.0	688.0	40.0		
7088.0	726.0	38.0	-2.0	
7854.0	766.0	40.0	2.0	4.0

Newton's Backward Interpolation at x = 82.0: 5280.11

```

PS D:\computer suff\College\Maths_Ass\SEM4> █

```