INTEGRATION: IVP

Input File:

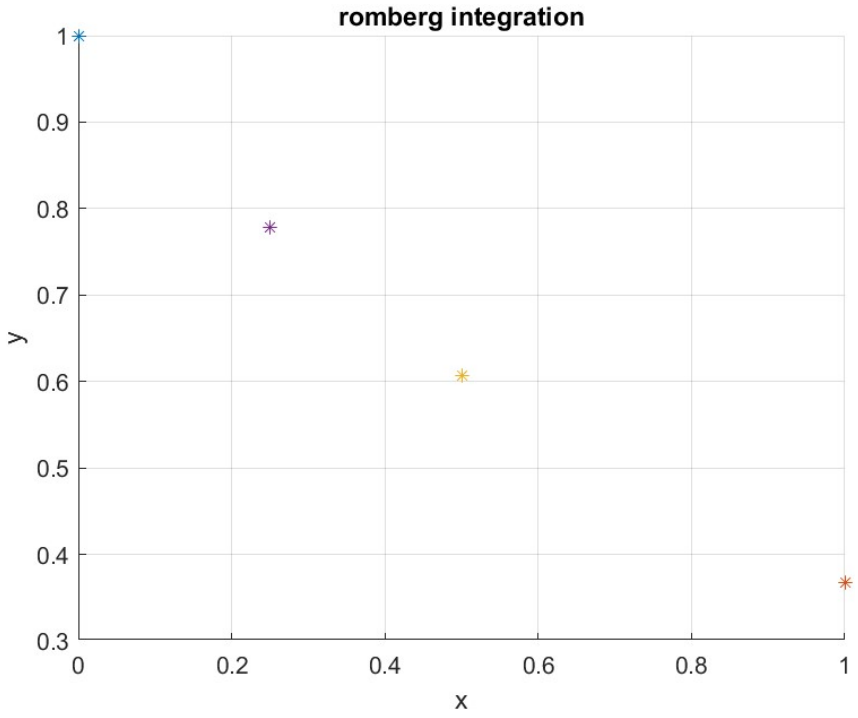
```
exp(-x)
0 1
0.01
1
```

1) ROMBERG INTEGRATION

Output File:

```
0.632121
4.000000
-0.002104
```

GRAPH

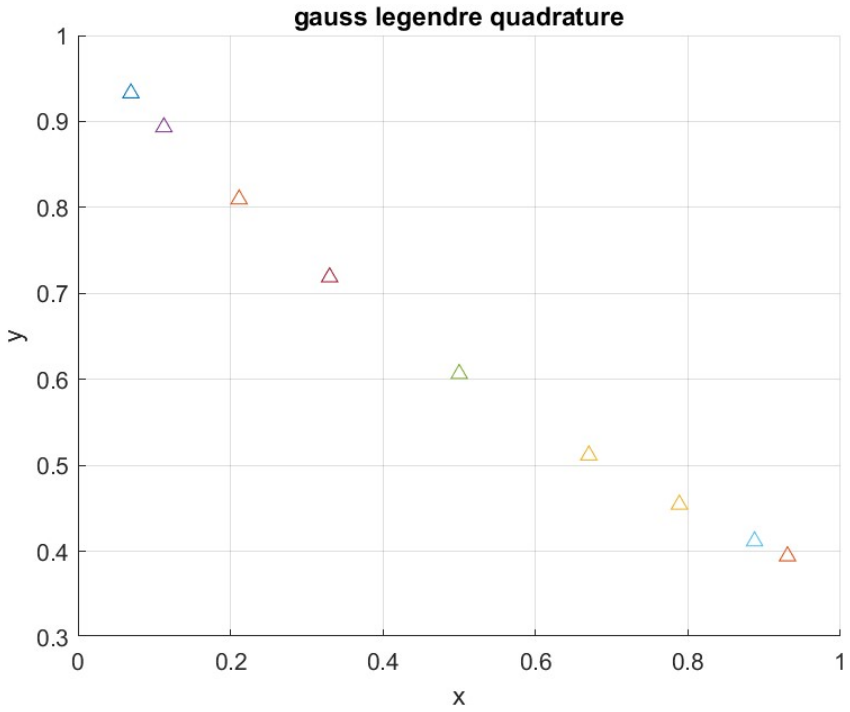


2) GAUSS LEGENDRE QUADRATURE INTEGRATION

Output File:

```
0.632120
4.000000
-0.000515
```

GRAPH



ORDINARY DIFFERENTIAL EQUATIONS

Input File:

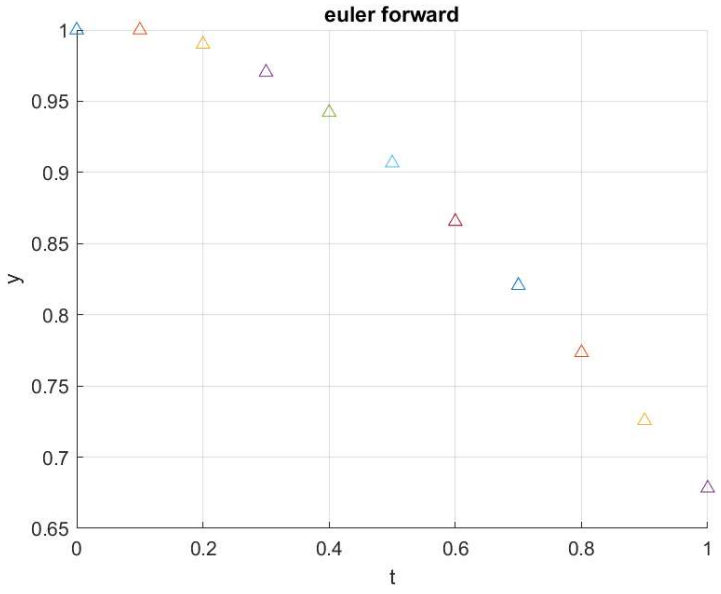
```
-y^2*t
0 1
1
0.1
2
```

1) EULER FORWARD METHOD

Output File:

x	y
0.000000	1.000000
0.100000	1.000000
0.200000	1.010000
0.300000	1.030402
0.400000	1.062254
0.500000	1.107389
0.600000	1.168705
0.700000	1.250657
0.800000	1.360147
0.900000	1.508147
1.000000	1.712853

GRAPH

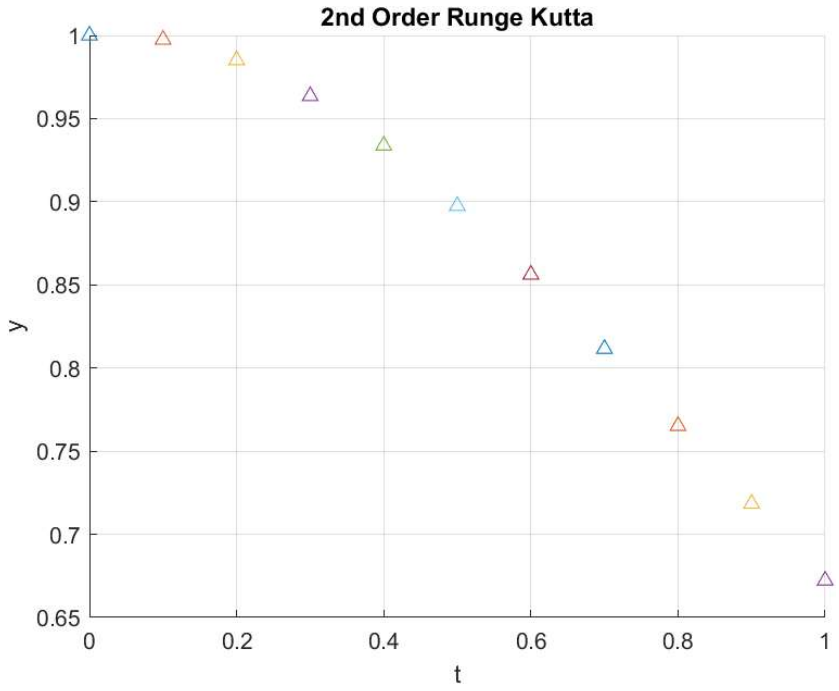


2) 2nd ORDER RUNGE KUTTA METHOD

Output File:

x	y
0.000000	1.000000
0.100000	1.005000
0.200000	1.020303
0.300000	1.046862
0.400000	1.086434
0.500000	1.141882
0.600000	1.217749
0.700000	1.321310
0.800000	1.464640
0.900000	1.668971
1.000000	1.974830

GRAPH



3) 4rth ORDER RUNGE KUTTA METHOD

Output File:

x	y
0.000000	1.000000
0.100000	1.005025
0.200000	1.020408
0.300000	1.047121
0.400000	1.086957
0.500000	1.142858
0.600000	1.219513
0.700000	1.324504
0.800000	1.470590
0.900000	1.680673
1.000000	1.999991

GRAPH