

EULER'S METHOD

$$y' = 1 - t + 4y, \quad y(0) = 1; \quad \text{Exact solution:} \quad \phi(t) = \frac{1}{16}(4t - 3 + 19e^{4t}).$$

		$h = 0.1$		$h = 0.01$	
t	$\phi(t)$	y	error	y	error
0.00	1.000000	1.000000	0.000000	1.000000	0.000000
0.10	1.609042	1.500000	0.109042	1.595290	0.013752
0.20	2.505330	2.190000	0.315330	2.464459	0.040871
0.30	3.830139	3.146000	0.684139	3.739035	0.091104
0.40	5.794226	4.474400	1.319826	5.613712	0.180514
1.00	64.897803	34.411490	30.486313	60.037126	4.860677
2.00	3540.200110	993.873033	2546.327076	3029.327877	510.872233
		$h = 0.001$		$h = 0.0001$	
t	$\phi(t)$	y	error	y	error
0.00	1.000000	1.000000	0.000000	1.000000	0.000000
0.10	1.609042	1.607629	0.001413	1.608900	0.000142
0.20	2.505330	2.501116	0.004214	2.504907	0.000423
0.30	3.830139	3.820713	0.009426	3.829193	0.000946
0.40	5.794226	5.775484	0.018742	5.792345	0.001881
1.00	64.897803	64.382558	0.515245	64.845969	0.051834
2.00	3540.200110	3484.160803	56.039307	3534.542326	5.657784