AA04 - Métodos Numéricos Computacionais

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1 Regra do Trapézio

k	$A_k(z)$	ER_k
0	0.005133828562	1
1	-0.002918088624	2.759312079
2	-0.003059366321	0.04617874509
3	-0.001729125908	0.7693137949
4	-0.001022912469	0.6903947895
5	-0.0009844382212	0.03908244002
6	-0.0009750497733	0.009628685832
7	-0.0009727173282	0.002397865251
8	-0.0009721351367	0.0005988792029
9	-0.0009719896463	0.0001496830259
10	-0.0009719532773	3.741845682e-05
11	-0.0009719441853	9.354470455e-06
12	-0.0009719419123	2.338608631e-06
13	-0.0009719413441	5.846515961e-07

2 Método de Simpson

k	$A_k(z)$	ER_k
0	0.01178418812	1
1	-0.002010359968	6.861730388
2	0.007434927043	1.270394041
3	0.002477078836	2.001489874
4	0.003315616624	0.2529055327
5	0.003316124536	0.0001531643666
6	0.003316156529	9.647565972e-06
7	0.003316158528	6.027045345e-07

3 Método de Gauss com 2 pontos gaussianos

k	$A_k(z)$	ER_k
0	-0.0006539595539	1
1	-0.0002302553917	1.840148711
2	-0.002194153968	0.8950596015
3	-0.000458706428	3.783351255
4	-0.0008548624598	0.4634149357
5	-0.0008588066612	0.004592653419
6	-0.0008589957584	0.0002201375799
7	-0.000859006809	1.286431074e-05
8	-0.0008590074883	7.908189935e-07

4 Método de Gauss com 3 pontos gaussianos

k	$A_k(z)$	ER_k
0	-0.004658292535	1
1	0.0007394139017	7.299979652
2	-0.0006301185864	2.173451978
3	-0.0001485539776	3.241681014
4	-0.0001618221377	0.08199224304
5	-0.0001618828439	0.0003750008083
6	-0.0001618839427	6.787877581e-06
7	-0.000161883959	1.008503957e-07

5 Valor total da integral

Somando as quatro contribuições, obtém-se o valor numérico da integral definida A:

$$A = 0.001323325736$$