

EXPONENTIAL INTEGRAL FOR COMPLEX ARGUMENTS Table 5.6

		$ze^z E_1(z)$									
y/x	\mathcal{R}	\mathcal{I}	\mathcal{R}	\mathcal{I}	\mathcal{R}	\mathcal{I}	\mathcal{R}	\mathcal{I}	\mathcal{R}	\mathcal{I}	
	-19		-18		-17		-16		-15		
0	1.059305	0.000000	1.063087	0.000001	1.067394	0.000002	1.072345	0.000006	1.078103	0.000014	
1	1.059090	0.003539	1.062827	0.004010	1.067073	0.004584	1.071942	0.005296	1.077584	0.006195	
2	1.058456	0.007000	1.062061	0.007918	1.066135	0.009032	1.070774	0.010403	1.076102	0.012118	
3	1.057431	0.010310	1.060829	0.011633	1.064636	0.013226	1.068925	0.015172	1.073783	0.017579	
4	1.056058	0.013410	1.059190	0.015079	1.062657	0.017075	1.066508	0.019486	1.070793	0.022432	
5	1.054391	0.016252	1.057215	0.018202	1.060297	0.020512	1.063659	0.023272	1.067318	0.026598	
6	1.052490	0.018806	1.054981	0.020969	1.057655	0.023505	1.060510	0.026499	1.063538	0.030055	
7	1.050413	0.021055	1.052565	0.023364	1.054829	0.026044	1.057187	0.029167	1.059610	0.032823	
8	1.048217	0.022996	1.050037	0.025391	1.051905	0.028141	1.053795	0.031306	1.055664	0.034957	
9	1.045956	0.024637	1.047458	0.027066	1.048958	0.029824	1.050421	0.032960	1.051797	0.036527	
10	1.043672	0.025993	1.044880	0.028412	1.046045	0.031130	1.047129	0.034183	1.048081	0.037609	
11	1.041402	0.027086	1.042345	0.029461	1.043212	0.032102	1.043967	0.035034	1.044559	0.038282	
12	1.039177	0.027940	1.039882	0.030245	1.040490	0.032781	1.040965	0.035567	1.041259	0.038616	
13	1.037018	0.028581	1.037515	0.030796	1.037901	0.033211	1.038140	0.035836	1.038192	0.038677	
14	1.034942	0.029034	1.035259	0.031148	1.035456	0.033431	1.035501	0.035888	1.035359	0.038520	
15	1.032959	0.029326	1.033123	0.031330	1.033162	0.033476	1.033049	0.035765	1.032754	0.038193	
16	1.031076	0.029477	1.031110	0.031368	1.031019	0.033377	1.030780	0.035502	1.030365	0.037735	
17	1.029296	0.029511	1.029222	0.031288	1.029025	0.033162	1.028685	0.035129	1.028180	0.037179	
18	1.027620	0.029445	1.027456	0.031110	1.027174	0.032855	1.026756	0.034672	1.026183	0.036552	
19	1.026046	0.029296	1.025809	0.030854	1.025459	0.032474	1.024981	0.034150	1.024360	0.035873	
20	1.024570	0.029080	1.024275	0.030534	1.023872	0.032037	1.023349	0.033582	1.022695	0.035160	
	-14		-13		-12		-11		-10		
0	1.084892	0.000037	1.093027	0.000092	1.102975	0.000232	1.115431	0.000577	1.131470	0.001426	
1	1.084200	0.007359	1.092067	0.008913	1.101566	0.011063	1.113230	0.014169	1.127796	0.018879	
2	1.082276	0.014306	1.089498	0.017161	1.098025	0.020981	1.108170	0.026241	1.120286	0.033700	
3	1.079313	0.020604	1.085635	0.024471	1.092873	0.029507	1.101137	0.036189	1.110462	0.045218	
4	1.075560	0.026075	1.080853	0.030637	1.086686	0.036422	1.093013	0.043843	1.099666	0.053451	
5	1.071279	0.030642	1.075522	0.035599	1.079985	0.041724	1.084526	0.049336	1.088877	0.058817	
6	1.066708	0.034303	1.069960	0.039405	1.073185	0.045522	1.076197	0.052967	1.078701	0.061886	
7	1.062046	0.037117	1.064412	0.042169	1.066578	0.048115	1.068350	0.055093	1.069450	0.063225	
8	1.057448	0.039174	1.059054	0.044041	1.060352	0.049644	1.061159	0.056057	1.061235	0.063322	
9	1.053021	0.040580	1.053997	0.045176	1.054606	0.050359	1.054687	0.056158	1.054046	0.062566	
10	1.048834	0.041444	1.049303	0.045719	1.049380	0.050452	1.048933	0.055640	1.047807	0.061249	
11	1.044928	0.041867	1.044997	0.045801	1.044674	0.050084	1.043853	0.054695	1.042417	0.059584	
12	1.041320	0.041938	1.041080	0.045531	1.040464	0.049384	1.039389	0.053465	1.037766	0.057719	
13	1.038010	0.041734	1.037537	0.044999	1.036713	0.048452	1.035473	0.052056	1.033752	0.055758	
14	1.034989	0.041321	1.034344	0.044277	1.033378	0.047365	1.032040	0.050547	1.030282	0.053773	
15	1.032241	0.040751	1.031474	0.043422	1.030414	0.046180	1.029026	0.048991	1.027274	0.051808	
16	1.029747	0.040066	1.028895	0.042477	1.027781	0.044941	1.026377	0.047428	1.024658	0.049894	
17	1.027486	0.039301	1.026579	0.041475	1.025438	0.043679	1.024043	0.045883	1.022375	0.048049	
18	1.025437	0.038481	1.024499	0.040444	1.023352	0.042417	1.021981	0.044374	1.020375	0.046282	
19	1.023580	0.037629	1.022628	0.039401	1.021489	0.041170	1.020155	0.042912	1.018617	0.044599	
20	1.021896	0.036759	1.020942	0.038361	1.019824	0.039950	1.018533	0.041505	1.017066	0.043001	
	-9		-8		-7		-6		-5		
0	1.152759	0.003489	1.181848	0.008431	1.222408	0.020053	1.278884	0.046723	1.353831	0.105839	
1	1.146232	0.026376	1.169677	0.038841	1.199049	0.060219	1.233798	0.097331	1.268723	0.160826	
2	1.134679	0.044579	1.151385	0.060814	1.169639	0.085335	1.186778	0.122162	1.196351	0.175646	
3	1.120694	0.057595	1.131255	0.074701	1.140733	0.098259	1.146266	0.130005	1.142853	0.170672	
4	1.106249	0.065948	1.111968	0.082156	1.115404	0.102861	1.114273	0.128440	1.105376	0.158134	
5	1.092564	0.070592	1.094818	0.085055	1.094475	0.102411	1.089952	0.122397	1.079407	0.143879	
6	1.080246	0.072520	1.080188	0.084987	1.077672	0.099188	1.071684	0.114638	1.061236	0.130280	
7	1.069494	0.072580	1.067987	0.083120	1.064339	0.094618	1.057935	0.106568	1.048279	0.118116	
8	1.060276	0.071425	1.057920	0.080250	1.053778	0.089537	1.047493	0.098840	1.038838	0.107508	
9	1.052450	0.069523	1.049645	0.076885	1.045382	0.084405	1.039464	0.091717	1.031806	0.098337	
10	1.045832	0.067197	1.042834	0.073340	1.038659	0.079462	1.033205	0.085271	1.026459	0.090413	
11	1.040241	0.064664	1.037210	0.069803	1.033231	0.074821	1.028260	0.079488	1.022317	0.083544	
12	1.035508	0.062063	1.032539	0.066381	1.028808	0.070524	1.024300	0.074315	1.019052	0.077561	
13	1.031490	0.059482	1.028638	0.063128	1.025171	0.066576	1.021090	0.069688	1.016439	0.072320	
14	1.028065	0.056975	1.025359	0.060070	1.022152	0.062962	1.018458	0.065542	1.014319	0.067702	
15	1.025132	0.054573	1.022583	0.057215	1.019626	0.059658	1.016277	0.061817	1.012577	0.063610	
16	1.022608	0.052291	1.020219	0.054559	1.017494	0.056638	1.014452	0.058460	1.011130	0.059962	
17	1.020426	0.050135	1.018192	0.052094	1.015681	0.053874	1.012912	0.055424	1.009915	0.056694	
18	1.018530	0.048106	1.016444	0.049806	1.014129	0.051341	1.011600	0.052670	1.008887	0.053752	
19	1.016874	0.046201	1.014929	0.047684	1.012790	0.049015	1.010476	0.050161	1.008009	0.051092	
20	1.015422	0.044413	1.013607	0.045714	1.011629	0.046875	1.009505	0.047870	1.007254	0.048675	

For $|z| > 4$, linear interpolation will yield about four decimals, eight-point interpolation will yield about six decimals.

See Examples 9 - 10.