

Table 10.12 INTEGRALS OF AIRY FUNCTIONS

$x$	$\int_0^x Ai(t) dt$	$\int_0^x Ai^*(-t) dt$	$\int_0^x Bi(t) dt$	$\int_0^x Bi(-t) dt$	$x$	$\int_0^x Ai(t) dt$	$\int_0^x Ai(-t) dt$	$\int_0^x Bi(-t) dt$
0.0	0.00000 00	0.00000 00	0.00000 00	0.00000 00	5.0	0.33328 76	0.71788 22	0.15873 09
0.1	0.03421 01	0.03679 54	0.06373 67	0.05924 87	5.1	0.33329 73	0.75103 62	0.14113 39
0.2	0.06585 15	0.07615 70	0.13199 45	0.11398 10	5.2	0.33330 50	0.77926 27	0.11667 30
0.3	0.09497 09	0.11802 51	0.20487 68	0.16411 57	5.3	0.33331 11	0.80111 58	0.08660 41
0.4	0.12164 06	0.16229 44	0.28256 70	0.20952 89	5.4	0.33331 59	0.81545 49	0.05250 03
0.5	0.14595 33	0.20880 95	0.36533 85	0.25006 28	5.5	0.33331 97	0.82151 82	+0.01617 86
0.6	0.16801 79	0.25736 07	0.45356 50	0.28553 62	5.6	0.33332 27	0.81897 90	-0.02038 99
0.7	0.18795 52	0.30768 05	0.54773 36	0.31575 56	5.7	0.33332 50	0.80797 96	-0.05518 54
0.8	0.20589 45	0.35944 15	0.64845 82	0.34052 58	5.8	0.33332 69	0.78914 06	-0.08625 18
0.9	0.22196 97	0.41225 56	0.75649 64	0.35966 27	5.9	0.33332 83	0.76354 19	-0.11181 25
1.0	0.23631 73	0.46567 40	0.87276 91	0.37300 50	6.0	0.33332 95	0.73267 53	-0.13038 11
1.1	0.24907 33	0.51918 94	0.99838 41	0.38042 77	6.1	0.33333 03	0.69836 93	-0.14086 00
1.2	0.26037 12	0.57224 05	1.13466 38	0.38185 43	6.2	0.33333 10	0.66268 96	-0.14262 05
1.3	0.27034 09	0.62421 79	1.28318 00	0.37726 99	6.3	0.33333 16	0.62781 93	-0.13555 73
1.4	0.27910 66	0.67447 31	1.44579 42	0.36673 34	6.4	0.33333 20	0.59592 62	-0.12611 15
1.5	0.28678 67	0.72232 88	1.62470 81	0.35038 81	6.5	0.33333 23	0.56902 35	-0.09726 08
1.6	0.29349 24	0.76709 26	1.82252 33	0.32847 24	6.6	0.33333 25	0.54883 59	-0.06847 29
1.7	0.29932 75	0.80807 24	2.04231 52	0.30132 67	6.7	0.33333 27	0.53667 65	-0.30152 42
1.8	0.30438 82	0.84459 41	2.28772 12	0.26939 97	6.8	0.33333 29	0.53334 74	-0.00088 80
1.9	0.30876 29	0.87602 06	2.56304 90	0.23325 04	6.9	0.33333 30	0.53906 98	+0.03340 40
2.0	0.31253 28	0.90177 28	2.87340 83	0.19354 74	7.0	0.33333 31	0.55345 17	0.06491 67
2.1	0.31577 11	0.92135 09	.	0.15106 46	7.1	0.33333 31	0.57549 72	0.09147 36
2.2	0.31854 43	0.93435 56	.	0.10667 18	7.2	0.33333 32	0.60365 96	0.11121 47
2.3	0.32091 19	0.94050 97	.	0.06132 23	7.3	0.33333 32	0.63593 60	0.12273 90
2.4	0.32292 74	0.93967 67	.	+0.01603 45	7.4	0.33333 33	0.66999 96	0.12521 80
2.5	0.32463 80	0.93187 78	.	-0.02812 94	7.5	0.33333 33	0.70336 19	0.11847 31
2.6	0.32608 57	0.91730 54	.	-0.07009 01	7.6	.	0.73355 34	0.10300 57
2.7	0.32730 74	0.89633 20	.	-0.10878 06	7.7	.	0.75830 99	0.07997 85
2.8	0.32833 55	0.86951 37	.	-0.14317 88	7.8	.	0.77575 13	0.05114 35
2.9	0.32919 83	0.83758 77	.	-0.17234 20	7.9	.	0.78453 65	+0.01872 22
3.0	0.32992 04	0.80146 29	.	-0.19544 25	8.0	.	0.78398 26	-0.01475 64
3.1	0.33052 31	0.76220 32	.	-0.21180 21	8.1	.	0.77413 57	-0.04664 84
3.2	0.33102 49	0.72100 37	.	-0.22092 49	8.2	.	0.75578 55	-0.07440 43
3.3	0.33144 15	0.67915 91	.	-0.22252 61	8.3	.	0.73041 93	-0.09577 87
3.4	0.33178 65	0.63802 56	.	-0.21655 57	8.4	.	0.70011 70	-0.10902 22
3.5	0.33207 15	0.59897 71	.	-0.20321 50	8.5	.	0.66739 21	-0.11303 86
3.6	0.33230 63	0.56335 61	.	-0.18296 47	8.6	.	0.63499 08	-0.10749 35
3.7	0.33249 93	0.53242 25	.	-0.15652 33	8.7	.	0.60566 32	-0.09285 98
3.8	0.33265 76	0.50730 05	.	-0.12485 43	8.8	.	0.58192 70	-0.07039 64
3.9	0.33278 70	0.48892 77	.	-0.08914 28	8.9	.	0.56584 22	-0.04205 63
4.0	0.33289 27	0.47800 75	.	-0.05076 01	9.0	.	0.55881 97	-0.01033 04
4.1	0.33297 86	0.47496 79	.	-0.01121 78	9.1	.	0.56148 12	+0.02196 26
4.2	0.33304 84	0.47992 95	.	+0.02788 79	9.2	.	0.57358 51	3.05192 24
4.3	0.33310 50	0.49268 51	.	0.06494 00	9.3	.	0.59403 00	0.07682 93
4.4	0.33315 07	0.51269 28	.	0.09837 02	9.4	.	0.62093 76	0.09439 87
4.5	0.33318 76	0.53908 35	.	0.12673 04	9.5	.	0.65181 01	0.10300 27
4.6	0.33321 73	0.57068 59	.	0.14876 50	9.6	.	0.68375 25	0.10183 70
4.7	0.33324 11	0.60606 63	.	0.16347 66	9.7	.	0.71373 85	0.09101 44
4.8	0.33326 02	0.64358 51	.	0.17018 59	9.8	.	0.73889 84	0.07157 33
4.9	0.33327 54	0.68146 70	.	0.16857 74	9.9	.	0.75680 07	0.04539 57
5.0	0.33328 76	0.71788 22	.	0.15873 09	10.0	.	0.76569 84	0.01504 04
	$\left[ \begin{smallmatrix} (-4) \\ 5 \end{smallmatrix} \right]$	$\left[ \begin{smallmatrix} (-3) \\ 7 \end{smallmatrix} \right]$	$\left[ \begin{smallmatrix} (-3) \\ 7 \end{smallmatrix} \right]$	$\left[ \begin{smallmatrix} (-3) \\ 6 \end{smallmatrix} \right]$		$\left[ \begin{smallmatrix} (-7) \\ 3 \end{smallmatrix} \right]$	$\left[ \begin{smallmatrix} (-3) \\ 7 \end{smallmatrix} \right]$	$\left[ \begin{smallmatrix} (-3) \\ 7 \end{smallmatrix} \right]$

Table 10.13 ZEROS AND ASSOCIATED VALUES OF AIRY FUNCTIONS AND THEIR DERIVATIVES

$s$	$a_s$	$Ai'(a_s)$	$a'_s$	$Ai(a'_s)$	$b_s$	$Bi'(b_s)$	$b'_s$	$Bi(b'_s)$
1	-2.33810 741	+0.70121 082	-1.01879 297	+0.53565 666	-1.17371 322	+0.60195 789	-2.29443 968	-0.45494 438
2	-4.08794 944	-0.80311 137	-3.24819 758	-0.41901 548	-3.27109 330	-0.76031 014	-4.07315 509	+0.39652 284
3	-5.52055 983	+0.86520 403	-4.82009 921	+0.38040 647	-4.83073 784	+0.83699 101	-5.51239 573	-0.36796 916
4	-6.78670 809	-0.91085 074	-6.16330 736	-0.35790 794	-6.16985 213	-0.88947 990	-6.78129 445	+0.34949 912
5	-7.94413 359	+0.94733 571	-7.37217 726	+0.34230 124	-7.37676 208	+0.92998 364	-7.94017 869	-0.33602 624
6	-9.02265 085	-0.97792 281	-8.48848 673	-0.33047 623	-8.49194 885	-0.96323 443	-9.01958 336	+0.32550 974
7	-10.04017 434	+1.00437 012	-9.53544 905	+0.32102 229	-9.53819 438	+0.99158 637	-10.03769 633	-0.31693 465
8	-11.00852 430	-1.02773 869	-10.52766 040	-0.31318 539	-10.52991 351	-1.01638 966	-11.00646 267	+0.30972 594
9	-11.93601 556	+1.04872 065	-11.47505 663	+0.30651 729	-11.47695 355	+1.03849 429	-11.93426 165	-0.30352 766
10	-12.82877 675	-1.06779 386	-12.38478 837	-0.30073 083	-12.38641 714	-1.05847 184	-12.82725 831	+0.29810 491

AUXILIARY TABLE—COMPLEX ZEROS AND ASSOCIATED VALUES OF  $Bi(z)$  AND  $Bi'(z)$

$s$	$e^{-i/3\theta_s}$		$Bi'(z_s)$		$e^{-i/3\theta'_s}$		$Bi(z'_s)$	
	Modulus	Phase	Modulus	Phase	Modulus	Phase	Modulus	Phase
1	2.354	0.095	0.993	+2.641	1.121	0.331	0.750	+0.466
2	4.093	0.042	1.136	-0.513	3.257	0.059	0.592	-2.632
3	5.524	0.027	1.224	+2.625	4.824	0.033	0.538	+0.515
4	6.789	0.020	1.288	-0.519	6.166	0.023	0.506	-2.624
5	7.946	0.015	1.340	+2.622	7.374	0.017	0.484	+0.519

From J. C. P. Miller, The Airy integral, British Assoc. Adv. Sci. Mathematical Tables Part-vol. B. Cambridge Univ. Press, Cambridge, England, 1946 and F. W. J. Olver, The asymptotic expansion of Bessel functions of large order. Philos. Trans. Roy. Soc. London [A] 247, 328-368, 1954 (with permission).

\*See page 11.