

Table 5.3 SINE AND COSINE INTEGRALS FOR ARGUMENTS πx

x	$\text{Si}(\pi x)$	$\text{Ci}(\pi x)$	x	$\text{Si}(\pi x)$	$\text{Ci}(\pi x)$
0.0	0.00000 00	0.00000 00	5.0	1.63396 48	3.32742 23
0.1	0.31244 18	0.02457 28	5.1	1.63088 98	3.36670 50
0.2	0.61470 01	0.09708 67	5.2	1.62211 92	3.40335 81
0.3	0.89718 92	0.21400 75	5.3	1.60871 21	3.43582 68
0.4	1.15147 74	0.36970 10	5.4	1.59212 99	3.46297 82
0.5	1.37076 22	0.55679 77	5.5	1.57408 24	3.48419 47
0.6	1.55023 35	0.76666 63	5.6	1.55635 75	3.49941 45
0.7	1.68729 94	0.98995 93	5.7	1.54064 82	3.50911 89
0.8	1.78166 12	1.21719 42	5.8	1.52839 53	3.51426 89
0.9	1.83523 65	1.43932 68	5.9	1.52065 96	3.51619 81
1.0	1.85193 70	1.64827 75	6.0	1.51803 39	3.51647 44
1.1	1.83732 28	1.83737 48	6.1	1.52060 20	3.51674 38
1.2	1.79815 90	2.00168 51	6.2	1.52794 77	3.51857 25
1.3	1.74191 10	2.13821 22	6.3	1.53921 04	3.52330 06
1.4	1.67621 68	2.24595 41	6.4	1.55318 17	3.53192 30
1.5	1.60837 27	2.32581 82	6.5	1.56843 12	3.54500 55
1.6	1.54487 36	2.38040 96	6.6	1.58344 97	3.56264 55
1.7	1.49103 51	2.41370 98	6.7	1.59679 62	3.58447 72
1.8	1.45072 37	2.43067 75	6.8	1.60723 30	3.60972 10
1.9	1.42621 05	2.43680 30	6.9	1.61383 85	3.63727 15
2.0	1.41815 16	2.43765 34	7.0	1.61608 55	3.66581 26
2.1	1.42569 13	2.43844 23	7.1	1.61388 08	3.69395 05
2.2	1.44667 38	2.44365 73	7.2	1.60756 18	3.72034 97
2.3	1.47794 03	2.45676 95	7.3	1.59785 21	3.74385 98
2.4	1.51568 40	2.48004 47	7.4	1.58578 13	3.76362 13
2.5	1.55583 10	2.51446 40	7.5	1.57257 88	3.77914 01
2.6	1.59441 60	2.55975 53	7.6	1.55954 96	3.79032 64
2.7	1.62792 16	2.61452 59	7.7	1.54794 81	3.79749 22
2.8	1.65355 62	2.67647 93	7.8	1.53885 84	3.80131 21
2.9	1.66945 05	2.74269 41	7.9	1.53309 50	3.80274 91
3.0	1.67476 18	2.80993 76	8.0	1.53113 13	3.80295 56
3.1	1.66968 11	2.87498 49	8.1	1.53306 26	3.80315 83
3.2	1.65535 02	2.93491 77	8.2	1.53860 67	3.80453 88
3.3	1.63369 82	2.98737 63	8.3	1.54713 99	3.80812 16
3.4	1.60721 88	3.03074 73	8.4	1.55776 52	3.81467 97
3.5	1.57870 92	3.06427 25	8.5	1.56940 54	3.82466 68
3.6	1.55099 62	3.08807 51	8.6	1.58091 06	3.83818 15
3.7	1.52667 49	3.10310 38	8.7	1.59117 06	3.85496 61
3.8	1.50788 19	3.11100 53	8.8	1.59922 11	3.87444 05
3.9	1.49612 20	3.11393 95	8.9	1.60433 29	3.89576 52
4.0	1.49216 12	3.11435 65	9.0	1.60607 69	3.91792 84
4.1	1.49599 24	3.11475 82	9.1	1.60435 85	3.93984 77
4.2	1.50687 40	3.11746 60	9.2	1.59942 00	3.96047 61
4.3	1.52343 40	3.12441 61	9.3	1.59180 91	3.97890 22
4.4	1.54382 74	3.13699 91	9.4	1.58232 00	3.99443 58
4.5	1.56593 04	3.15595 79	9.5	1.57191 16	4.00666 94
4.6	1.58755 15	3.18134 84	9.6	1.56161 12	4.01551 22
4.7	1.60664 04	3.21256 74	9.7	1.55241 46	4.02119 22
4.8	1.62147 45	3.24843 85	9.8	1.54519 00	4.02422 80
4.9	1.63080 69	3.28734 92	9.9	1.54059 74	4.02537 29
5.0	1.63396 48	3.32742 23	10.0	1.53902 91	4.02553 78

$$\text{Ci}(\pi x) = \gamma + \ln \pi + \ln x - \text{Ci}(\pi x)$$

$$\gamma + \ln \pi = 1.72194 \ 55508$$

$\text{Si}(n\pi)$ are maximum values of $\text{Si}(x)$ if $n > 0$ is odd, and minimum values if $n > 0$ is even.

$\text{Ci}\left[\left(n + \frac{1}{2}\right)\pi\right]$ are maximum values of $\text{Ci}(x)$ if $n > 0$ is even, and minimum values if $n > 0$ is odd. We have

$$\text{Si}(n\pi) \sim \frac{\pi}{2} - \frac{(-1)^n}{n\pi} \left[1 - \frac{2!}{n^2\pi^2} + \frac{4!}{n^4\pi^4} - \dots \right] \quad (n \rightarrow \infty)$$

$$\text{Ci}\left[\left(n + \frac{1}{2}\right)\pi\right] \sim \frac{(-1)^n}{\left(n + \frac{1}{2}\right)\pi} \left[1 - \frac{2!}{\left(n + \frac{1}{2}\right)^2\pi^2} + \frac{4!}{\left(n + \frac{1}{2}\right)^4\pi^4} - \dots \right] \quad (n \rightarrow \infty)$$