t	$x(t) = (1 - \cos t)\cos t$	$S_{\Delta}(X,t)$	$y(t) = (1 - \cos t)\sin t$	$S_{\Delta}(Y,t)$
0.0	0.0	0.0	0.0	0.0
0.15707963267948966	0.012160082447560897	0.013855739641113446	0.00192596785275715	0.007778888151670501
0.3141592653589793	0.046548019107679896	0.05038547955285996	0.01512436822871087	0.024681362708985157
0.47123889803846897	0.09711389804213127	0.1006980277627045	0.04948200255207306	0.058405071309119316
0.6283185307179586	0.1545084971874737	0.155902192298112	0.11225699414489633	0.1166476615892483
0.7853981633974483	0.20710678118654752	0.20710678118654752	0.20710678118654746	0.2071067811865475
0.9424777960769379	0.24229374947994683	0.23029216267542862	0.33348873622737063	0.33784426262083966
1.0995574287564276	0.24788312588578337	0.23088047592300853	0.4864980270008942	0.49549912311440425
1.2566370614359172	0.21352549156242115	0.19916542030749318	0.657163890148917	0.667074564772168
1.413716694115407	0.1319627231878077	0.12544069520708842	0.8331798434076639	0.8395737896990575
1.5707963267948966	$6.123233995736765 \times 10^{-17}$	$5.551115123125783{ imes}10^{-17}$	0.9999999999999	1.0
1.727875959474386	-0.18090620689265371	-0.18267531558267036	1.142196837782611	1.1344035213103612
1.8849555921538759	-0.4045084971874736	-0.4107482766932398	1.2449491424413903	1.2330265950919495
2.0420352248333655	-0.6600978735933101	-0.6681942581311284	1.2955150213758415	1.2851585863370116
2.199114857512855	-0.9332767551049991	-0.9389886346957577	1.284545252522524	1.2800888600377953
2.356194490192345	-1.2071067811865475	-1.2071067811865475	1.2071067811865475	1.2071067811865475
2.5132741228718345	-1.463525491562421	-1.456820198300816	1.0633135104400502	1.059920465010932
2.670353755551324	-1.6848991503346042	-1.6743994944399812	0.8584989969270206	0.8498638950400008
2.827433388230814	-1.8555650134826274	-1.846411403903357	0.6029096205211841	0.592689805038223
2.9845130209103035	-1.9632165987427144	-1.9594226609902585	0.3109429622277048	0.3041509287700665
3.141592653589793	-2.0	-2.0	$2.4492935982947064\times10^{-16}$	$2.4492127076447545\times10^{-16}$
3.2986722862692828	-1.9632165987427146	-1.9591966940430066	-0.3109429622277043	-0.30402730768613023
3.455751918948772	-1.8555650134826278	-1.8460159617456664	-0.602909620521183	-0.5923327868787753
3.612831551628262	-1.6848991503346045	-1.6739475605454768	-0.8584989969270203	-0.8493352903470116
3.7699111843077517	-1.4635254915624214	-1.456481247879938	-1.0633135104400497	-1.0594536708599107
3.9269908169872414	-1.207106781186548	-1.207106781186548	-1.2071067811865475	-1.2071067811865475
4.084070449666731	-0.9332767551049997	-0.9396847068879426	-1.2845452525225243	-1.2810088390923033
4.241150082346221	-0.6600978735933105	-0.6695536138094849	-1.2955150213758417	-1.2870568347536988
4.39822971502571	-0.4045084971874739	-0.41242287976167485	-1.24494914244139	-1.2354431233435614
4.5553093477052	-0.1809062068926543	-0.1840018825550132	-1.1421968377826115	-1.1363600600347192
4.712 388 980 384 69	$-1.8369701987210302\times10^{-16}$	$-1.1102230246251565\times10^{-16}$	-1.0000000000000002	-1.0000000000000002
4.869468613064179	0.13196272318780752	0.1278990635231027	-0.8331798434076642	-0.8372859866015452
5.026548245743669	0.21352549156242107	0.20411445399368286	-0.6571638901489173	-0.6620634948355069
5.183627878423159	0.24788312588578335	0.2370909908213663	-0.4864980270008943	-0.4889086878873505
5.340707511102648	0.2422937494799469	0.23527349341577922	-0.33348873622737085	-0.3323977289425422
5.497787143782138	0.2071067811865476	0.20710678118654757	-0.20710678118654768	-0.20710678118654766
5.654866776461628	0.15450849718747375	0.1619185456515257	-0.11225699414489644	-0.11187076671487792
5.811946409141117	0.09711389804213136	0.10871983223392269	-0.049482002552073134	-0.052986503988937894
5.969026041820607	0.046548019107679896	0.05740455846517588	-0.015124368228710881	-0.021009570380177978
6.126105674500097	0.012160082447561005	0.017866641876722586	-0.0019259678527571702	-0.0064955432600485585
6.283185307179586	0.0	0.0	0.0	0.0