

Supplemental Material of “Circuit encapsulation for efficient quantum computing based on controlled many-body dynamics”

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In the supplemental material, we provide the data of the magnetic fields for realizing the circuits of the N -qubit quantum Fourier transformations (QFT). We constrain that the adjustable parameters of the Hamiltonian only concerns the one-body terms, i.e., the magnetic fields. Specifically, we take the quantum Ising chain as an example, where the Hamiltonian reads

$$\hat{H}(t) = \sum_{n=1}^{N-1} 2\pi \hat{S}_n^z \hat{S}_{n+1}^z - \sum_{n=1}^N [2\pi h_n^x(t) \hat{S}_n^x + 2\pi h_n^y(t) \hat{S}_n^y]. \quad (1)$$

Using the all circuit encapsulation (all-CE), the evolution operator for the time duration T optimally gives the QFT transformation $\hat{U}$, i.e.,

$$\hat{U} \simeq e^{-i \int_0^T \hat{H}(t) dt} \simeq \prod_{k=1}^K \exp \left[-i 2\pi \tau \left(\sum_{n=1}^{N-1} \hat{S}_n^z \hat{S}_{n+1}^z + \sum_{n=1}^N h_{n,k}^x \hat{S}_n^x + \sum_{n=1}^N h_{n,k}^y \hat{S}_n^y \right) \right], \quad (2)$$

with the Trotter step $\tau = T/K$. In other words, $h_{n,k}^\alpha$ gives the magnetic field on the n -th qubit along the α direction for $(k-1)\tau < t \leq k\tau$. We take the Plank constant $\hbar = 1$ as the energy scale. The fine-grain gradient optimization [Phys. Rev. A 104, 052413 (2021)] is used to optimize the magnetic fields. The data of $\{h_{n,k}^x\}$ and $\{h_{n,k}^y\}$ are given in the following tables.

Table 1: The magnetic field $\{h_{n,k}^x\}$ and $\{h_{n,k}^y\}$ to realize the 3-qubit QFT circuit. We take the total time $T = 2.5$, $K = 16$, and thus the Trotter step $\tau = 2.5/16$.

N=3	$n = 1(x)$	$n = 2(x)$	$n = 3(x)$	$n = 1(y)$	$n = 2(y)$	$n = 3(y)$
k = 1	2.5200	1.1241	2.0913	-0.8708	6.5155	0.9684
k = 2	-3.4680	-2.6926	1.7399	0.4843	1.6136	0.0225
k = 3	0.7146	0.2951	-0.9941	-0.0510	0.6200	0.1901
k = 4	-3.5893	0.0126	0.3534	-1.0671	2.3487	-0.3437
k = 5	2.4218	3.7036	-1.2167	3.1167	0.2928	3.2711
k = 6	0.0921	1.5545	-0.0244	1.6419	-0.8181	0.2004
k = 7	1.8846	3.7036	0.7561	2.7360	-1.0196	2.3977
k = 8	0.1039	4.6113	-0.0749	-0.2101	6.3208	0.6167
k = 9	1.3047	-1.0784	-1.1282	-0.5598	-2.1676	2.2287
k = 10	-0.3069	1.6726	0.9965	0.1547	0.5690	1.9589
k = 11	0.0855	-1.8119	-1.2253	0.2088	1.2135	-0.9519
k = 12	0.6660	-1.6526	0.9290	-2.6301	-4.6781	-0.7768
k = 13	-3.0899	-3.6192	-0.7211	0.6960	0.0646	2.5695
k = 14	0.3392	-5.9336	-0.9462	0.3823	-4.8670	0.2046
k = 15	-1.1780	0.7618	-0.5203	2.1487	-1.6040	-1.5267
k = 16	1.2331	-1.3057	0.2840	0.8696	-2.5542	-1.0940

Table 2: The magnetic field $\{h_{n,k}^x\}$ and $\{h_{n,k}^y\}$ to realize the 4-qubit QFT circuit. We take the total time $T = 3$, $K = 64$, and thus the Trotter step $\tau = 3/64$.

N=4	$n = 1(x)$	$n = 2(x)$	$n = 3(x)$	$n = 4(x)$	$n = 1(y)$	$n = 2(y)$	$n = 3(y)$	$n = 4(y)$
k = 1	-1.2645	0.8421	0.7198	-1.8456	0.1838	-0.0305	-2.3435	-2.0955
k = 2	-1.4858	0.0712	0.2867	-1.2547	0.1034	0.3184	-2.1605	-1.7754
k = 3	-1.7013	-0.6702	0.4412	0.3811	-0.7784	-0.2024	-1.2027	-0.8011
k = 4	-1.3737	-0.5405	0.6558	0.4646	-0.9076	-0.4031	-1.3392	-0.8511
k = 5	0.2871	0.9753	0.5884	3.5194	-1.1292	0.2552	-2.8211	-2.3255
k = 6	0.2098	0.9388	0.4245	3.3883	-0.9880	0.2530	-2.9552	-2.4866
k = 7	-1.4471	-1.4604	0.9751	1.7890	-1.3846	0.2471	-1.5990	-1.5865
k = 8	-1.5025	-1.3846	0.9641	1.5582	-1.3710	0.6959	-1.3830	-1.3493
k = 9	1.4219	1.2991	-0.6963	-0.5031	2.2102	-2.1480	-1.2658	0.3543
k = 10	1.4842	1.2594	-0.4909	-0.3419	2.4306	-2.7023	-1.1928	0.2686
k = 11	1.3450	1.2217	0.2816	0.7222	2.1280	-0.3855	-0.2896	-0.1836
k = 12	1.1387	1.1695	0.1628	0.8143	1.9339	-0.1168	-0.3496	-0.2292
k = 13	-0.8685	-0.5224	0.4101	1.2314	-0.0793	-0.0723	-0.5759	-0.6003
k = 14	-0.8591	-0.6488	0.4411	1.2085	-0.0363	-0.5307	-0.6382	-0.6299
k = 15	-0.6816	-0.0944	1.2232	0.6939	-0.2221	-0.0234	-0.9002	-0.3298
k = 16	-0.8302	0.0364	1.3624	0.6883	-0.0921	0.3960	-0.8218	-0.2981
k = 17	0.9660	-0.1985	1.2710	0.9690	-0.1112	0.2078	-1.2265	-0.3811
k = 18	0.8575	-0.2247	1.2712	1.0785	-0.2138	-0.1663	-1.4693	-0.3766
k = 19	0.6152	0.9488	0.3844	1.4922	-0.1532	-0.7558	-1.4941	-0.7179
k = 20	0.7350	0.8936	0.5578	1.3186	-0.2123	-0.6298	-0.9028	-0.8957
k = 21	3.7409	1.6554	3.5838	-2.1844	-0.5054	2.9170	0.8959	-1.2630
k = 22	3.9901	1.5809	3.3106	-2.2753	-0.5913	2.7075	0.3474	-1.1670
k = 23	3.3627	2.2065	4.3665	-2.4473	-0.4526	2.1386	1.5642	-1.7156
k = 24	3.0305	2.1862	4.4785	-2.2610	-0.4312	1.8886	1.5643	-1.5904
k = 25	0.1920	-1.5492	0.0741	0.1023	0.0934	-1.6609	-0.0079	-0.8297
k = 26	0.2720	-1.3410	0.0052	0.3053	0.0404	-1.8096	-0.2023	-0.7290
k = 27	0.1741	0.2404	0.5940	-0.2246	-0.0704	-1.4178	0.8779	-1.1223
k = 28	0.1841	0.2420	0.6759	-0.3943	-0.1173	-1.4920	1.1258	-1.4246
k = 29	-0.0766	-1.4489	3.6215	-3.2976	-0.0191	0.3862	2.9747	-1.7333
k = 30	-0.0807	-1.5442	3.3687	-3.3310	0.0363	0.5448	2.7224	-1.7567
k = 31	-0.3480	-0.6055	1.3694	-1.7852	0.1500	1.3594	0.9695	-1.2417
k = 32	-0.3519	-0.7815	1.4799	-1.7875	0.1609	1.5142	1.3330	-0.9486
k = 33	-0.1558	1.3068	3.3416	2.5606	0.0421	-2.0517	2.1504	-2.1658
k = 34	-0.1535	1.5316	3.1818	2.7641	-0.0045	-2.3605	2.3162	-2.5545
k = 35	0.4030	1.1886	1.5550	2.3453	-0.2084	-1.4867	2.9249	-3.0498
k = 36	0.6643	1.1858	1.9185	1.8021	-0.2647	-1.1815	2.1079	-2.7835
k = 37	-0.3594	-0.2851	2.0811	-0.9707	0.1172	0.0495	-0.2750	0.7041
k = 38	-0.3997	-0.4500	1.8672	-0.5847	0.2361	-0.1683	-0.0527	0.7470
k = 39	-0.2269	0.5899	1.7849	-0.3724	0.3898	-0.1766	0.8860	1.0181
k = 40	-0.3995	1.0608	1.7359	-0.5382	0.3593	-0.1038	0.8153	1.0361
k = 41	0.4438	0.1913	2.8121	0.9502	-0.5944	-0.9720	0.3236	-0.4316
k = 42	0.4803	-0.1544	2.9438	0.9452	-0.6682	-0.8368	0.2628	-0.4534
k = 43	-0.2687	-0.1268	2.0858	2.7350	0.0649	-1.2589	-1.9450	-1.5207
k = 44	-0.4279	0.0888	1.7362	2.6920	0.1768	-1.5272	-1.9806	-1.5491
k = 45	0.2090	0.1004	1.4098	1.6614	0.3736	-1.5703	-0.0889	-0.1861
k = 46	0.2447	0.3908	1.8369	1.8487	0.3419	-1.2750	0.0585	-0.2529
k = 47	0.5279	-2.2286	2.6624	1.7147	-0.1986	-0.1539	-0.7503	-0.7246
k = 48	0.5419	-3.2305	2.4726	1.5437	-0.2930	-0.1662	-0.8751	-0.5531
k = 49	1.1132	1.9128	3.1356	1.1450	-0.4267	-0.5856	-0.3707	2.9370
k = 50	1.3985	3.3325	3.4900	1.2647	-0.5087	-0.9572	0.2374	3.0560

N=4	$n = 1(x)$	$n = 2(x)$	$n = 3(x)$	$n = 4(x)$	$n = 1(y)$	$n = 2(y)$	$n = 3(y)$	$n = 4(y)$
k = 51	3.8342	3.8668	2.5437	0.8745	-0.3482	-0.0291	2.8552	2.7906
k = 52	3.8961	2.8066	2.3890	0.7968	-0.1949	0.3274	2.6967	2.6319
k = 53	2.7053	-1.5379	2.7413	0.6126	-0.1923	0.1511	0.4634	1.5114
k = 54	2.5185	-0.8912	2.3256	0.5713	-0.1894	-0.0901	0.3827	1.5175
k = 55	0.8721	0.9314	0.6227	1.6030	-0.0176	0.9492	2.4561	1.3060
k = 56	0.8218	0.6361	0.7548	1.4634	-0.0110	0.8882	2.4735	1.4983
k = 57	-1.3248	0.2026	0.8433	2.1270	0.2249	-1.1239	0.8671	-0.2566
k = 58	-1.0869	0.1949	0.6643	2.2090	0.1756	-0.9685	0.9830	-0.3977
k = 59	-0.0767	-0.5790	0.3310	2.7405	0.4480	0.7120	2.4161	-1.0594
k = 60	-0.2187	-0.1376	0.6361	2.8953	0.5325	0.6826	2.6510	-1.2924
k = 61	0.2077	0.3850	1.6687	1.0497	-0.3807	-0.4458	1.4981	-1.3020
k = 62	0.1801	0.0706	1.1537	0.8394	-0.3210	-0.4213	1.0748	-0.8013
k = 63	0.2377	-0.2810	0.6101	-0.0135	-2.5204	0.2541	2.5194	0.2066
k = 64	0.1992	0.4394	0.7495	-0.0459	-3.1425	0.0569	3.3051	0.3025

Table 3: The magnetic field $\{h_{n,k}^x\}$ and $\{h_{n,k}^y\}$ to realize the 5-qubit QFT circuit. We take the total time $T = 6$, $K = 128$, and thus the Trotter step $\tau = 6/128$.

N=5	$n = 1(x)$	$n = 2(x)$	$n = 3(x)$	$n = 4(x)$	$n = 5(x)$	$n = 1(y)$	$n = 2(y)$	$n = 3(y)$	$n = 4(y)$	$n = 5(y)$
k = 1	1.0649	1.2873	2.5057	-0.6190	-0.1088	-2.3665	-1.3042	-0.4277	-1.1788	-3.6799
k = 2	0.8012	0.2811	0.8994	-2.5990	0.1322	-2.0457	-0.2011	-1.2902	0.2885	-2.9433
k = 3	0.6391	-0.5466	1.5717	-2.0515	-1.6232	-1.0418	0.5220	-1.4143	0.0064	-3.5844
k = 4	0.5606	0.0174	2.1013	-0.2456	-2.0064	-0.8934	-0.0145	-0.7852	-0.5103	-3.7671
k = 5	-0.2236	0.2653	3.5082	-4.8591	-1.2329	-0.6508	0.0837	-2.0707	3.4297	-3.5382
k = 6	-0.1364	-0.2120	2.3019	-4.6888	-0.8252	-0.5970	-0.0496	-1.7872	3.3788	-3.2603
k = 7	0.4738	0.2331	0.2497	0.0062	-0.1788	-0.3536	-0.8431	-0.0272	-0.4954	-3.1408
k = 8	0.5621	0.6447	0.1111	1.1465	-0.5571	-0.5454	-0.1978	0.2098	-0.2734	-3.0285
k = 9	-0.1148	0.7012	0.6471	0.0877	-1.1059	-0.5798	0.0367	-0.5923	-0.1431	-2.2954
k = 10	-0.2732	0.3316	1.7953	-1.9985	-0.6890	-0.8223	-0.7828	-0.6832	1.0124	-2.7590
k = 11	-0.7414	-0.3252	2.9946	-4.6573	-0.6586	-0.9562	-0.3725	-2.2393	1.6888	-3.4144
k = 12	-0.7813	-0.0214	2.2358	-3.7795	-0.7739	-0.9309	0.5626	-2.8518	1.3915	-2.8018
k = 13	-0.6663	1.3711	2.3377	0.3257	-1.8388	-0.4906	-0.6032	0.1161	0.9321	-1.7452
k = 14	-0.5571	1.2611	2.3721	0.3776	-1.7763	-0.2830	-1.2905	1.3512	-0.0379	-1.8001
k = 15	-0.1684	-0.2600	0.6786	-1.2036	-2.0018	0.0415	0.0753	-0.9201	-0.3098	-2.0650
k = 16	-0.1231	-0.1184	0.2553	-0.3428	-1.8282	0.1430	0.3832	-1.4809	0.4729	-2.2301
k = 17	0.3391	0.5706	1.0667	-1.7352	-2.7870	0.3556	-0.2541	-1.8142	2.0005	-0.1849
k = 18	0.4262	0.2320	1.6869	-3.6842	-2.9011	0.3305	-0.4677	-1.8526	2.5846	-0.0057
k = 19	-0.2126	1.0780	2.6853	-3.6814	-2.2389	-0.1356	0.4368	-3.2420	3.3172	-0.8137
k = 20	-0.3862	1.8952	1.5314	-2.1364	-2.1345	-0.5290	0.9837	-2.6254	0.9310	-0.6694
k = 21	-2.2192	2.4316	1.8165	-0.0525	-2.4774	-2.6145	1.1688	-0.8741	-0.3311	0.0488
k = 22	-2.4068	1.3781	2.1082	-0.1021	-2.6187	-2.5005	-0.1322	-0.6372	0.3632	0.2381
k = 23	-1.8117	-0.2442	3.1032	-0.8302	-2.0126	-2.1836	-0.3866	-1.0481	1.2724	0.8490
k = 24	-1.8531	0.3896	3.8137	-1.1454	-1.5232	-1.8991	1.4191	-0.5533	1.0017	0.4034
k = 25	-0.6012	1.4625	-0.3843	0.0912	-1.3134	-0.8555	-0.4901	-0.5302	-0.2025	0.9200
k = 26	-0.3336	1.6818	-1.1511	-0.1849	-1.6135	-0.9096	-1.2072	-0.5880	-0.2048	0.9822
k = 27	-0.0152	1.5664	-1.9315	-1.3903	-2.6158	-0.2098	0.2791	0.9986	1.3703	1.4242
k = 28	0.1127	1.3210	-1.9269	-1.4303	-3.5161	-0.3556	0.3148	0.7819	2.1666	1.8373
k = 29	0.5488	-1.2040	3.0175	-1.8437	-2.2752	0.4338	0.6093	-0.9322	1.1438	1.3788
k = 30	0.3602	-1.0380	3.3504	-0.7223	-1.5936	0.4493	0.6439	-0.1361	0.1865	1.0617
k = 31	-0.1595	0.3066	2.7040	-0.1967	-1.0113	0.4723	-1.7649	-0.1585	1.6065	1.4490
k = 32	-0.1202	-0.0268	3.1078	-1.6177	-0.7950	0.4911	-1.7813	-0.5887	2.2313	1.7096
k = 33	-0.1134	0.2846	1.7203	-0.4453	0.5276	-0.2727	1.7927	0.7337	-1.4284	-0.1071
k = 34	-0.1102	0.5035	1.3501	-0.1527	0.2947	-0.2064	2.1758	-0.0363	-1.3729	-0.1583
k = 35	-0.1121	0.8702	2.9711	0.7405	-0.1267	-0.4837	0.2870	-1.7775	-4.7428	0.1562
k = 36	-0.2680	0.3757	3.3185	1.1682	-0.2605	-0.4135	-0.0036	-0.4307	-5.0403	0.3198
k = 37	-0.2581	-0.3157	1.9411	-0.7258	-2.2422	-0.0534	0.2860	0.3000	0.8510	0.6176
k = 38	-0.1434	0.4272	1.5985	-0.8512	-2.2972	-0.0370	0.3755	-0.2075	0.9820	0.4795
k = 39	-0.1285	0.5803	1.1571	0.2425	-2.0609	0.1366	0.3399	-0.6875	0.4739	0.6045
k = 40	0.0093	0.1182	1.3055	0.2484	-1.9583	0.0729	0.3282	-0.7121	0.1514	0.9935
k = 41	-0.0326	-0.4546	1.2983	-0.4194	-2.7169	0.0487	-0.5931	-0.6616	-2.3075	1.1320
k = 42	-0.1800	-0.6576	1.2246	-0.0516	-2.8114	-0.0459	-0.7225	-0.0779	-1.9148	0.9872
k = 43	0.1646	-0.2469	1.8444	-0.4518	-2.6206	-0.3367	0.2808	-0.2983	-2.0118	0.1927
k = 44	0.0764	0.6980	2.3071	-0.5507	-2.3646	-0.4499	0.3956	-0.4959	-2.6442	-0.0665
k = 45	-0.1360	0.2925	1.3678	0.2714	-1.4969	-0.3828	0.1008	-1.4525	-1.0981	1.8034
k = 46	-0.1519	-0.6044	0.8804	-0.2659	-1.3604	-0.2150	-0.2500	-1.5723	-0.9210	1.5667
k = 47	-0.3707	-0.9243	0.4062	-0.1522	-1.1860	-0.1612	-1.0659	-2.3754	-0.2604	1.6892
k = 48	-0.2643	-0.8317	0.3804	0.4711	-1.3847	-0.2818	-1.0073	-2.2308	0.1257	1.6015
k = 49	0.2791	0.8576	3.4145	0.1341	-0.0011	0.7260	0.4275	-1.2011	0.1304	-0.2096
k = 50	0.5160	0.2634	3.7351	-0.8276	-0.1714	0.5635	1.0349	-0.7986	0.0966	-0.1018

N=5	$n = 1(x)$	$n = 2(x)$	$n = 3(x)$	$n = 4(x)$	$n = 5(x)$	$n = 1(y)$	$n = 2(y)$	$n = 3(y)$	$n = 4(y)$	$n = 5(y)$
k = 51	0.9316	1.2089	4.8798	0.1092	-0.4885	1.3130	0.2955	-0.8579	0.7815	0.1957
k = 52	1.3418	2.3805	5.2835	0.7445	-0.7857	1.5874	1.1362	-0.2941	0.5542	0.4136
k = 53	1.6006	2.2707	3.0791	-0.5649	-2.3228	0.8481	1.7965	1.6524	-2.8219	-0.2428
k = 54	1.1629	1.9726	3.2944	-0.1708	-2.7690	1.0735	0.1411	0.7027	-2.9521	-0.0110
k = 55	0.9118	0.8264	3.5042	-0.2697	-1.7802	0.7916	-0.0391	0.5962	-2.7264	-0.3885
k = 56	0.9471	0.3780	2.6405	-0.3039	-0.7882	0.5611	0.6863	0.8284	-1.4701	-0.8617
k = 57	1.1767	-0.8158	-0.3488	-0.4113	1.7689	1.5752	-0.2570	-0.0550	0.9902	1.3845
k = 58	1.1444	-0.8707	-1.0850	-1.1781	2.4748	1.2762	-0.6923	-0.1995	-0.1775	1.3285
k = 59	1.2236	-0.1213	-1.3193	-3.3277	1.5424	0.6072	0.5299	-0.7541	-0.8202	1.7940
k = 60	1.1361	1.1680	-0.1289	-2.2235	0.6913	0.8167	0.6081	-0.2310	0.6600	1.8013
k = 61	0.8895	2.5841	4.6306	1.3556	-1.2798	0.7792	-0.0802	0.7160	1.0427	0.4816
k = 62	0.4460	1.1041	5.1320	1.9535	-1.3574	0.8353	0.2213	0.0515	-0.1737	0.0315
k = 63	0.6438	0.4832	4.0927	0.8650	-1.1838	0.8379	-0.2200	-0.7801	0.9544	-0.2022
k = 64	0.9425	0.4859	3.3905	-0.1826	-1.0852	0.6766	-0.2835	-0.2612	0.0757	-0.0016
k = 65	2.7637	0.6660	1.4600	-1.4756	0.6805	0.4479	1.5808	0.3371	-1.6303	-0.8879
k = 66	3.4410	1.8737	1.3324	-1.3450	0.7418	0.7535	2.0445	-0.5871	-1.0150	-0.1580
k = 67	2.4020	1.7331	0.1702	-1.1382	0.6528	0.7133	0.9326	-0.8908	0.2977	0.2433
k = 68	1.6528	0.6614	-0.1749	-0.4137	0.6295	0.5030	0.0838	0.6925	0.0916	0.4187
k = 69	0.2497	-0.8375	0.0275	-0.7708	0.8645	0.1427	-0.3529	0.3165	-0.4119	0.0775
k = 70	0.2358	-1.2158	0.1875	-0.9999	1.3939	0.0191	0.1284	-1.2056	-0.3619	-0.0366
k = 71	0.0978	-0.3848	1.1538	-1.4803	1.8661	0.1476	0.1296	-0.1825	-1.0172	-0.5867
k = 72	0.2343	0.3115	1.1301	-1.6733	1.7296	0.3361	0.0840	0.7577	-0.5908	-0.9876
k = 73	-0.6416	1.2416	0.9793	-0.9123	2.5440	-0.0929	-0.3542	-0.0201	-0.0381	-0.3259
k = 74	-0.5223	1.3493	1.2335	-0.8617	2.2643	-0.0375	-0.4231	-0.9257	-0.1763	-0.2520
k = 75	0.0068	0.2466	1.1100	-0.4773	2.5657	-0.1723	-0.4426	-0.9930	-0.7989	-0.2567
k = 76	-0.0961	-1.2199	1.4391	-0.8038	2.7626	-0.3682	-0.7308	0.1002	-0.4020	-0.8564
k = 77	0.0481	-1.2933	1.0193	-1.1963	1.5545	0.1086	1.7542	1.6568	-0.0210	-1.0027
k = 78	0.1816	0.9230	0.8609	-1.6809	1.2495	-0.0327	2.2736	-1.4686	-1.0813	-0.5638
k = 79	-0.0334	1.5772	2.2721	-2.2297	0.3863	-0.0641	-1.4838	-2.5731	-1.1218	-0.0408
k = 80	-0.2441	0.5232	2.3876	-1.3722	0.1773	0.0856	-2.1216	-0.0560	-0.0548	-0.0733
k = 81	-0.1403	0.5678	1.5204	0.0916	0.1105	-0.1391	0.6183	1.1227	-0.1411	0.1350
k = 82	-0.0993	1.1436	0.8178	-0.3170	0.2213	-0.0533	2.1086	0.9830	-0.5058	0.0010
k = 83	0.0124	-0.1303	-0.4427	-0.2989	1.4420	0.1377	3.2372	-2.2873	0.1281	-0.4491
k = 84	0.1149	0.1924	0.1925	-0.1021	2.1362	0.1704	0.8207	-3.7386	-0.5613	-0.7780
k = 85	-0.1485	1.9390	0.9675	-1.8072	3.1683	-0.0712	-3.7583	1.2297	-0.2612	-1.2295
k = 86	-0.0702	0.7627	0.5101	-1.6337	2.9651	-0.0375	-1.4652	2.2446	0.1427	-0.8854
k = 87	-0.2337	-0.5649	3.1814	-1.9538	1.2790	-0.0225	2.0278	-2.2525	-2.4234	-0.0658
k = 88	-0.4595	-0.3865	3.8951	-3.0205	0.3140	-0.1319	1.7722	-4.2303	-0.9374	0.3555
k = 89	0.3982	0.9718	1.8384	-2.0394	-0.2409	0.1902	-0.2012	-0.4811	0.8363	-0.6687
k = 90	-0.0582	0.7669	0.7587	-1.1730	0.2100	0.1141	0.1454	0.9278	-0.1018	-0.8221
k = 91	0.2234	0.6118	-0.5432	-0.2083	2.3357	-0.1701	0.0948	-0.3276	-1.0955	-1.1867
k = 92	0.8552	0.7236	-0.4845	-0.7045	3.4576	-0.1657	-0.6404	-0.8290	-1.8254	-1.5304
k = 93	3.0798	0.2380	1.9073	-3.7267	2.4255	1.1544	1.3623	-0.3564	0.6854	-1.2989
k = 94	3.5847	1.5790	3.5096	-4.9004	1.5508	1.2168	1.5622	-0.4043	-1.2153	-1.1872
k = 95	1.5910	0.8385	3.6021	-2.7527	0.5712	0.7271	-0.5833	0.5951	-2.1012	-0.5453
k = 96	0.8232	-0.7955	1.8163	-1.1403	0.5412	0.7059	-0.3329	-0.1935	0.4159	-0.2685
k = 97	0.9976	-0.3355	0.2340	1.3006	-0.1903	-0.6506	0.1604	-1.1576	1.2157	0.9891
k = 98	1.1969	0.3645	1.0483	1.1725	-0.3764	-0.5703	0.3779	-0.8252	0.0318	0.9364
k = 99	1.6507	1.4085	1.7597	1.5982	-0.2418	-0.2719	0.0520	1.3283	0.8006	0.9598
k = 100	1.4669	1.2786	1.2115	1.6260	-0.0800	-0.6090	0.1946	2.0271	1.1709	0.8729

N=5	$n = 1(x)$	$n = 2(x)$	$n = 3(x)$	$n = 4(x)$	$n = 5(x)$	$n = 1(y)$	$n = 2(y)$	$n = 3(y)$	$n = 4(y)$	$n = 5(y)$
k = 101	0.0764	-0.0833	-0.1963	0.3878	-0.5228	1.1330	-0.0031	0.8915	0.4251	0.1544
k = 102	0.1427	-0.7888	-0.2040	-0.0292	-0.1493	1.1768	-0.0193	-0.1328	0.2045	-0.1208
k = 103	-0.1448	-0.4090	-0.3305	-0.1661	-0.3181	1.1325	0.1249	-0.8253	-0.0415	0.0087
k = 104	-0.3120	0.2907	-0.1441	0.4857	-0.6994	1.3073	0.1107	-0.6979	0.0516	0.0634
k = 105	-0.9965	0.3038	2.0308	-2.4696	-1.1291	0.0225	-0.3702	1.2265	-1.7224	2.1550
k = 106	-0.7859	0.1604	3.5217	-4.3693	-1.9409	0.2676	-0.1383	1.2435	-2.4863	2.7117
k = 107	-0.5140	0.2396	2.9904	-1.8764	-1.2493	0.5010	0.3604	0.1436	-1.2192	1.3962
k = 108	-0.4291	0.3142	1.2089	-0.4571	-0.4346	0.3790	0.2050	0.4328	-0.1557	0.9633
k = 109	0.8376	0.2117	0.0534	0.4130	1.7459	-1.3600	-0.2602	0.4805	0.6409	0.4267
k = 110	1.2371	0.2354	0.0907	0.1601	2.2592	-1.7821	-0.0681	0.0377	-0.1866	0.5389
k = 111	1.9714	0.9086	1.2044	-1.3048	3.6665	-2.4126	0.1559	0.0759	-2.0115	1.0906
k = 112	1.6388	1.2509	2.6593	-2.1099	3.1944	-2.6435	-0.1078	0.6675	-1.3411	1.3119
k = 113	0.7770	1.0615	3.5740	-1.5073	0.7549	0.2389	-0.0296	0.7913	-0.4712	0.4658
k = 114	0.6212	0.6241	3.3718	-0.8493	0.6534	0.6027	0.4619	1.0076	-1.1512	0.0587
k = 115	0.1253	0.0040	1.8740	0.0533	0.6160	1.3643	-0.0679	0.5345	-0.3876	-0.0477
k = 116	0.0675	-0.2164	1.1711	0.5266	0.9531	1.9894	-0.4266	-0.3050	0.3619	-0.1670
k = 117	0.4520	-0.2523	1.1296	-0.6047	-1.0205	3.4506	0.1978	0.5933	-0.0841	2.2186
k = 118	0.4211	0.4761	1.7189	-1.7878	-1.7799	3.1767	0.2153	0.5869	-1.3828	2.7844
k = 119	0.6116	-0.0539	3.0904	-3.6913	-2.7862	2.4130	-0.1867	0.5850	-3.2404	3.1168
k = 120	0.7268	-0.7462	2.8457	-1.9880	-2.3871	1.7020	0.0739	0.7237	-1.8198	2.5131
k = 121	0.3707	0.9853	1.7916	0.4356	-0.3033	-0.7375	-0.0308	0.5624	0.8952	0.7539
k = 122	0.3532	1.5677	1.1968	0.1854	-0.6731	-0.9159	0.0553	0.0336	0.1963	1.1487
k = 123	0.6875	1.1581	1.0057	-2.3616	-1.4318	-0.3574	0.1890	0.4652	-2.3045	2.8484
k = 124	0.6787	0.7496	1.5700	-2.8296	-0.3664	-0.0679	-0.2353	0.4495	-2.3664	2.7205
k = 125	-0.7880	0.0710	2.8953	-1.1893	0.1989	0.8522	0.0073	0.2141	-0.8738	1.1948
k = 126	-0.9446	-0.4801	2.6306	-0.1683	0.1503	1.2914	0.2458	0.9092	-0.2183	0.3967
k = 127	-1.6059	0.8216	2.7727	0.4740	0.3342	1.3454	-0.2482	0.8976	0.1474	-0.1168
k = 128	-1.8249	1.8688	2.6014	-1.1880	0.3588	1.4384	0.1685	0.4699	-0.7229	0.4232

Table 4: The magnetic field $\{h_{n,k}^x\}$ and $\{h_{n,k}^y\}$ to realize the 6-qubit QFT circuit. We take the total time $T = 10.5$, $K = 256$, and thus the Trotter step $\tau = 10.5/256$.

N=6	$n = 1(x)$	$n = 2(x)$	$n = 3(x)$	$n = 4(x)$	$n = 5(x)$	$n = 6(x)$	$n = 1(y)$	$n = 2(y)$	$n = 3(y)$	$n = 4(y)$	$n = 5(y)$	$n = 6(y)$
k = 1	-0.2277	-1.7403	-1.8394	-0.7176	0.0176	-2.5750	1.2799	1.8100	0.7921	0.3008	-0.0685	2.1263
k = 2	-0.1731	-1.6804	-1.8195	-0.5136	0.0307	-2.4847	1.3874	1.9556	0.6577	0.1075	0.0663	2.1043
k = 3	0.1779	-1.9631	-0.2543	-0.0963	-0.0924	-2.2089	1.4929	1.8903	0.1337	-0.0978	-0.1184	1.9249
k = 4	0.1899	-1.9227	-0.1747	0.0270	-0.1842	-2.1579	1.4065	1.8328	0.1562	-0.1259	-0.0918	1.9263
k = 5	0.1173	-1.2320	0.8892	-0.0034	-0.2526	-2.3435	0.6351	1.4617	-0.3423	0.3353	-0.1292	2.9018
k = 6	0.0854	-1.2367	0.8282	-0.0020	-0.2630	-2.4424	0.6201	1.4832	-0.3875	0.2959	-0.0304	2.9126
k = 7	-0.1879	-1.2295	0.2894	-0.0769	0.1124	-2.4323	0.5297	1.2172	-0.1645	-0.3163	0.6092	3.0667
k = 8	-0.2223	-1.2468	0.2311	-0.1215	0.2525	-2.3963	0.5659	1.2502	-0.2079	-0.1196	0.2954	3.1122
k = 9	0.0236	-0.0120	-0.3654	0.1714	1.3091	-1.8284	-0.9648	0.0201	0.2919	-0.0969	-0.3896	1.3358
k = 10	0.0070	-0.0050	-0.3286	-0.0604	1.1427	-1.7678	-0.9485	-0.0371	0.3512	-0.1415	-0.2476	1.3071
k = 11	0.0256	0.2540	-0.3220	0.0534	1.8170	-1.9338	-0.9978	-0.1923	0.0334	0.2904	0.2916	1.2784
k = 12	0.0506	0.2767	-0.3250	0.2531	1.9966	-1.9999	-0.9918	-0.2250	-0.0223	0.2054	0.2504	1.2753
k = 13	0.1919	-0.1449	-0.4565	-0.1615	1.8160	-1.9104	-0.9259	0.1648	0.0886	-0.1940	0.3139	1.5523
k = 14	0.1933	-0.1555	-0.3715	0.0180	1.7998	-1.9116	-0.9343	0.1649	0.1269	-0.1692	0.3415	1.5403
k = 15	0.2298	-0.7363	0.0859	-0.3330	0.7036	-1.4941	-0.9817	0.5948	0.1454	0.0746	-0.2231	1.4426
k = 16	0.2305	-0.7498	0.0935	-0.5589	0.5703	-1.4844	-1.0157	0.6694	0.1500	0.0350	-0.2701	1.4126
k = 17	-1.5829	-1.9648	0.1302	0.2764	-0.2043	-0.4440	0.8391	2.1474	-0.1548	0.1315	0.0265	2.3366
k = 18	-1.5904	-2.0024	-0.0548	0.1700	-0.2288	-0.4764	0.8141	2.2000	-0.1610	0.2507	0.1519	2.3731
k = 19	-1.6685	-2.1004	-0.3741	0.2465	-0.0292	-0.9534	0.7052	2.0622	0.1899	-0.1895	-0.1390	2.7528
k = 20	-1.6747	-2.1307	-0.2244	0.3703	0.0310	-0.9647	0.6793	2.0295	0.2001	-0.1874	-0.1822	2.7918
k = 21	-1.8716	-1.4156	0.8576	1.6092	-0.1180	-1.7159	0.8218	1.4981	-0.2900	-0.3550	-0.0525	3.1597
k = 22	-1.8673	-1.3265	0.9962	1.9039	-0.0633	-1.6914	0.8822	1.5660	-0.3549	-0.3966	-0.0436	3.1343
k = 23	-1.8099	-1.1716	1.0870	2.3368	-0.3835	-0.9263	1.1281	1.3564	-0.5229	0.0024	0.3417	2.7900
k = 24	-1.7813	-1.2357	0.8835	2.1765	-0.4271	-0.9001	1.1309	1.2786	-0.5023	-0.0585	0.3057	2.7812
k = 25	-1.0837	-1.4734	0.1584	0.3158	0.9296	-0.2549	1.8331	1.6912	-0.0290	-0.2813	-0.0133	1.8202
k = 26	-1.0849	-1.4637	0.1474	0.1907	0.8754	-0.2159	1.8406	1.7045	0.0258	-0.3276	0.0106	1.8526
k = 27	-1.1341	-1.4681	-0.0685	-0.0379	1.0569	-0.4029	1.9316	1.8522	0.0801	0.1618	0.3738	2.0819
k = 28	-1.1642	-1.4363	-0.0193	-0.0908	1.0980	-0.4799	1.9351	1.8282	0.0289	0.2697	0.3649	2.1276
k = 29	-1.1070	-1.2818	-0.0964	-0.4004	0.8691	-0.5413	1.7885	1.3753	-0.0698	0.2401	0.3031	2.9028
k = 30	-1.0742	-1.2543	-0.1083	-0.3809	0.9184	-0.5841	1.7316	1.3086	-0.0660	0.4547	0.2772	2.8776
k = 31	-0.9381	-0.9036	0.0125	-0.3257	0.7434	-0.4971	1.3665	1.1467	0.0488	-0.6168	-0.1784	2.8927
k = 32	-0.9102	-0.8910	-0.0475	-0.2313	0.6888	-0.5871	1.3530	1.1798	0.0720	-0.9090	-0.1257	2.8569
k = 33	0.3338	-0.2453	-0.0272	2.0929	-0.9772	0.4207	-0.1733	0.2378	0.1309	-0.4355	0.0767	2.2240
k = 34	0.3284	-0.2698	0.0060	2.0547	-0.8537	0.5070	-0.1739	0.2722	0.0846	-0.5385	0.1371	2.2292
k = 35	0.2483	-0.3505	-0.1720	1.7409	-0.6359	0.6560	-0.0423	0.2603	-0.1442	0.2334	-0.6465	2.1500
k = 36	0.2451	-0.3647	-0.1508	1.7343	-0.8860	0.6911	-0.0301	0.2343	-0.1501	0.5311	-0.6339	2.1390
k = 37	0.2262	-0.1203	-0.0537	1.0972	-0.4613	0.5127	-0.1096	0.4364	0.2289	-0.7509	0.2113	1.3235
k = 38	0.2176	-0.1269	-0.0479	1.1658	-0.1768	0.4433	-0.1023	0.4178	0.2618	-0.6889	0.1771	1.2964
k = 39	0.1088	-0.2075	0.1384	0.9731	-0.2201	0.4393	-0.1142	0.3529	-0.1635	-1.1702	-0.2207	1.1829
k = 40	0.1109	-0.2018	0.0723	0.8906	-0.4636	0.4631	-0.1345	0.3444	-0.2813	-1.3449	-0.2414	1.1778
k = 41	-0.3107	-1.1752	-0.1402	-0.3462	-1.3251	-1.1937	-0.4248	0.6784	0.0679	0.4355	-0.2172	1.8647
k = 42	-0.3201	-1.0914	-0.0309	-0.4933	-1.2580	-1.1315	-0.4257	0.6712	0.2261	0.1773	-0.2595	1.9009
k = 43	-0.2998	-1.1136	-0.1304	-0.0683	-0.7951	-0.9558	-0.4267	0.9536	0.0889	1.0145	-0.3008	1.9258
k = 44	-0.3023	-1.1318	-0.2059	0.0962	-0.7310	-0.9446	-0.3784	0.9858	-0.0291	1.0760	-0.2869	1.9474
k = 45	0.0065	-1.3219	0.2902	0.9676	1.2758	-0.7652	0.0631	1.4134	-0.1843	-0.0329	0.4262	2.3294
k = 46	0.0159	-1.4016	0.2633	0.9522	1.1508	-0.7862	0.0482	1.4539	-0.1438	0.1229	0.4967	2.3367
k = 47	0.1073	-1.5903	0.1130	0.1632	0.6140	-0.8384	0.0213	1.4997	0.0943	-0.6093	0.1871	2.5840
k = 48	0.1146	-1.6299	0.0918	0.1444	0.6454	-0.8086	-0.0088	1.5175	0.0983	-0.4718	0.0431	2.6196
k = 49	0.9739	-1.5257	-0.1571	0.9749	0.7362	-0.7316	0.1208	1.4252	-0.1132	-0.2992	0.0129	1.3073
k = 50	0.9627	-1.5352	-0.1679	1.0037	0.7492	-0.7917	0.1147	1.3769	-0.1475	-0.4922	0.0269	1.2708

N=6	$n = 1(x)$	$n = 2(x)$	$n = 3(x)$	$n = 4(x)$	$n = 5(x)$	$n = 6(x)$	$n = 1(y)$	$n = 2(y)$	$n = 3(y)$	$n = 4(y)$	$n = 5(y)$	$n = 6(y)$
k = 51	1.0516	-1.3655	0.6330	1.6504	0.7821	-0.8494	0.0804	1.2758	-0.1127	0.3483	0.5096	1.0743
k = 52	1.0420	-1.3468	0.9493	1.6889	0.8179	-0.8487	0.1263	1.2342	-0.0114	0.2564	0.5742	1.0464
k = 53	1.6209	-1.6566	2.7958	1.2638	1.5389	-0.8550	-0.1105	1.8645	-1.0003	0.0471	0.1700	0.8167
k = 54	1.6727	-1.6608	2.6442	1.1441	1.5632	-0.8498	-0.0393	2.0245	-1.2436	0.1225	0.1227	0.8423
k = 55	1.8866	-2.3486	1.9153	0.4549	1.5843	-0.7382	0.0286	2.4210	-0.5625	-0.4364	0.6510	0.9145
k = 56	1.8791	-2.4723	1.6133	0.5368	1.5967	-0.7330	0.0122	2.2859	-0.5352	-0.2903	0.5702	0.9474
k = 57	1.1273	-1.7222	0.7536	-0.3029	1.0768	-0.7022	-0.1326	1.8124	-0.2332	0.2370	0.2074	2.0829
k = 58	1.0774	-1.5353	1.0118	-0.2111	1.0294	-0.6568	-0.1633	1.8581	-0.2488	0.1943	0.2003	2.0649
k = 59	0.7472	-1.0813	0.9266	0.1796	0.9417	-0.7357	-0.1374	1.1881	-0.5033	-0.0358	0.2048	1.9478
k = 60	0.7598	-1.1115	0.9730	0.0839	0.9152	-0.7227	-0.1529	1.1415	-0.4509	-0.1499	0.2355	1.8966
k = 61	1.0595	-1.4163	1.3139	0.2080	1.1486	-0.9411	-0.0981	1.1655	-0.2146	-0.1418	0.4944	2.2829
k = 62	1.0940	-1.4329	1.1740	0.1214	1.2091	-0.9457	-0.0880	1.1444	-0.2544	-0.0320	0.5064	2.3091
k = 63	1.2319	-1.0039	1.0366	0.1790	1.4235	-0.9785	-0.0628	1.3944	-0.3204	0.1618	0.1950	2.3811
k = 64	1.2171	-0.8971	1.0378	0.3631	1.4498	-1.0029	-0.0500	1.4472	-0.4839	0.1899	0.1282	2.4107
k = 65	-0.5038	0.4206	-0.7584	1.1285	0.6421	-2.4492	0.5793	-0.4808	0.0636	-0.4172	0.3256	-1.5044
k = 66	-0.5202	0.3089	-0.6824	1.1242	0.6339	-2.4694	0.5919	-0.5284	0.1843	-0.5988	0.3791	-1.4891
k = 67	-0.6432	0.0908	-0.5095	1.0312	0.7468	-2.3955	0.5921	-0.3551	0.2084	0.1675	0.0221	-1.4746
k = 68	-0.6499	0.1231	-0.4792	0.9049	0.7121	-2.3710	0.5847	-0.3136	0.1589	0.2188	0.0707	-1.4918
k = 69	-0.6550	0.2582	-0.1830	0.2966	1.2638	-2.0965	0.3765	-0.1379	0.0437	-0.0353	0.3028	-1.1620
k = 70	-0.6497	0.3173	-0.2487	0.2475	1.2901	-2.0937	0.3821	-0.0921	0.0124	-0.0088	0.2623	-1.1771
k = 71	-0.5935	0.1664	-0.5143	0.0497	1.1219	-2.2440	0.2584	-0.0004	0.2086	-0.2657	0.6410	-1.1033
k = 72	-0.5735	0.0950	-0.5513	0.1099	1.1473	-2.2323	0.2419	-0.0556	0.3869	-0.2356	0.5041	-1.0895
k = 73	-1.1687	-1.0685	0.6978	-0.0330	1.5452	-2.3404	0.3034	0.8350	-0.1994	0.2261	0.3615	-2.2164
k = 74	-1.1448	-1.1202	0.6602	-0.0160	1.5161	-2.3391	0.3047	0.8336	-0.3136	0.2467	0.6139	-2.2200
k = 75	-1.0471	-0.8474	0.7894	-0.3360	1.6563	-2.1131	0.2464	1.0242	-0.3188	-0.0587	0.4533	-2.3381
k = 76	-1.0395	-0.8361	0.8809	-0.3918	1.6240	-2.1234	0.2879	1.0341	-0.2369	-0.1707	0.3935	-2.3352
k = 77	-0.9950	-1.6461	2.4143	0.5063	1.3814	-2.4295	0.9617	1.4695	-0.4761	-0.0755	0.5123	-1.7012
k = 78	-1.0183	-1.5459	2.5282	0.5560	1.3674	-2.4149	0.9785	1.5062	-0.5709	0.0659	0.4121	-1.6803
k = 79	-1.1189	-1.4725	2.5298	1.1250	1.2117	-2.4112	1.2022	1.2647	-0.5744	0.0860	0.7335	-1.5672
k = 80	-1.1665	-1.5183	2.4301	1.0604	1.2613	-2.4231	1.1712	1.2153	-0.5745	0.0254	0.6982	-1.5809
k = 81	0.2826	-2.6714	1.3140	0.4525	-0.3920	-2.0569	0.0837	1.3752	-0.3675	-0.3645	-0.3770	-1.8142
k = 82	0.2784	-2.7020	1.2771	0.6224	-0.3808	-2.0662	0.0844	1.4079	-0.1450	-0.3796	-0.3097	-1.8379
k = 83	0.3863	-2.5797	1.8105	0.8519	-0.3730	-2.2095	-0.2316	1.7578	0.1456	0.2090	-0.4274	-1.8445
k = 84	0.4497	-2.4689	1.9031	0.5629	-0.4419	-2.2214	-0.2535	1.8112	-0.0436	0.2591	-0.3624	-1.8304
k = 85	0.3487	-2.5816	0.7335	-0.6976	-0.2341	-2.5989	-0.3819	1.2442	-0.6677	-0.0892	0.0669	-1.6759
k = 86	0.3834	-2.6517	0.6329	-0.5919	-0.2287	-2.5870	-0.4097	1.0989	-0.3748	-0.0512	-0.0064	-1.6457
k = 87	0.3776	-2.6899	0.4982	0.3100	-0.0820	-2.4358	-0.2471	1.3305	0.3922	-0.0603	-0.0259	-1.7033
k = 88	0.3507	-2.6999	0.5340	0.4343	0.0022	-2.4435	-0.2294	1.5104	0.0701	-0.0795	0.0186	-1.7142
k = 89	-0.0843	-0.7303	-0.4457	0.6509	0.6609	-2.1654	0.2781	0.8111	-0.0941	0.1356	0.2428	-2.0752
k = 90	-0.1201	-0.7459	-0.4639	0.5941	0.7178	-2.1873	0.2797	0.7545	0.0525	-0.0760	0.3016	-2.0919
k = 91	-0.2697	-0.9296	-0.7845	0.4724	0.6931	-2.3461	0.3707	0.4747	0.0232	-0.2436	0.2781	-2.0994
k = 92	-0.2967	-0.9089	-0.7893	0.4101	0.5761	-2.3304	0.3741	0.3930	0.1337	-0.0609	0.1884	-2.0891
k = 93	-0.2800	-0.7065	-0.4572	-0.4873	0.1775	-2.9444	0.0495	0.3999	-0.1889	0.1114	0.1628	-2.0828
k = 94	-0.2641	-0.6258	-0.4954	-0.4749	0.1820	-2.9447	0.0480	0.3871	-0.2581	0.2991	0.1659	-2.0694
k = 95	-0.2745	-0.2101	-0.3438	-0.4841	0.2302	-2.8085	0.0364	0.5740	0.1902	0.0587	-0.0692	-2.1764
k = 96	-0.2786	-0.1894	-0.2958	-0.4535	0.2569	-2.8096	0.0423	0.5975	0.2478	-0.2034	-0.0150	-2.2027
k = 97	-1.1177	-0.5197	0.1265	2.7497	0.1077	-0.3447	-0.2301	0.6032	0.3481	-0.2889	0.2748	-0.0674
k = 98	-1.1592	-0.6034	0.2184	2.6958	0.1131	-0.3592	-0.2235	0.6019	0.1049	-0.2208	0.2904	-0.0432
k = 99	-1.0966	-0.7844	0.3536	2.2895	0.0496	-0.3969	-0.2529	0.5430	-0.4950	-0.3051	-0.2512	-0.0374
k = 100	-1.0641	-0.7947	0.2273	2.2850	0.0356	-0.4022	-0.2318	0.5937	-0.2800	-0.3071	-0.2974	-0.0308

N=6	$n = 1(x)$	$n = 2(x)$	$n = 3(x)$	$n = 4(x)$	$n = 5(x)$	$n = 6(x)$	$n = 1(y)$	$n = 2(y)$	$n = 3(y)$	$n = 4(y)$	$n = 5(y)$	$n = 6(y)$
k = 101	-1.1359	-0.3693	0.1468	2.0035	-0.2559	-0.5269	-0.0423	0.6429	0.1959	-0.1590	-0.0881	-0.0817
k = 102	-1.0798	-0.3308	0.1597	2.0336	-0.2166	-0.5123	-0.0284	0.5939	0.0524	-0.2208	-0.1293	-0.1190
k = 103	-0.9805	-0.0816	0.1810	2.5391	0.0612	-0.5072	0.0279	0.4917	-0.0196	-0.3891	0.4253	-0.2515
k = 104	-0.9960	-0.0149	0.2084	2.6027	0.1109	-0.5118	0.0283	0.4461	0.0483	-0.3573	0.5128	-0.2334
k = 105	0.9951	-0.7704	1.4520	3.0129	2.3415	-1.1316	-0.3002	0.5635	-0.3782	-0.1484	0.5901	-1.6355
k = 106	1.0017	-0.8017	1.4781	3.0170	2.1234	-1.1686	-0.2211	0.5777	-0.2719	-0.3475	0.8323	-1.5691
k = 107	1.1168	-1.0112	1.4235	2.8024	1.6710	-1.2945	-0.1997	0.8757	-0.2821	-0.4628	0.8009	-1.3995
k = 108	1.1345	-1.0853	1.3690	2.8147	1.7670	-1.3047	-0.2652	0.9264	-0.5619	-0.2383	0.3883	-1.4167
k = 109	0.8817	-0.8095	0.0182	2.4974	2.2708	-1.3740	-0.5255	1.2984	-0.0372	-0.0911	1.3418	-1.0828
k = 110	0.8643	-0.7874	-0.0055	2.4198	2.3044	-1.3235	-0.6473	1.3122	0.2430	-0.2978	1.7701	-1.0927
k = 111	0.7439	-0.8606	-0.0477	2.3503	2.4101	-0.8340	-0.8794	1.1613	0.0403	-0.5770	1.0919	-0.9768
k = 112	0.7253	-0.8771	-0.0421	2.3502	2.3827	-0.6948	-0.9395	1.1148	-0.1488	-0.5045	0.7318	-0.9441
k = 113	-0.6165	-0.9508	-0.1609	0.2026	-0.5946	-1.7702	-0.5238	1.1678	-0.0548	0.4121	-0.5282	-0.9213
k = 114	-0.6297	-0.9050	-0.0955	0.1883	-0.6622	-1.8672	-0.5118	1.1710	0.0189	0.2401	-0.3196	-0.9256
k = 115	-0.6610	-0.9726	0.1984	-0.1024	-0.4481	-2.0565	-0.3694	1.1265	0.0944	0.1726	0.0864	-1.0467
k = 116	-0.6544	-1.0290	0.1824	-0.0834	-0.2840	-2.0932	-0.3146	1.1081	0.0511	0.2775	0.0720	-1.0602
k = 117	-0.0069	-1.1345	0.6584	0.1815	0.2757	-2.9114	-0.3932	1.5929	-0.1549	-0.3749	-0.2669	-0.9173
k = 118	0.0385	-1.1241	0.6172	0.2297	0.1515	-2.9436	-0.3631	1.6347	-0.1894	-0.3134	-0.2928	-0.8625
k = 119	0.0565	-1.1690	0.3226	0.5284	-0.1113	-3.1162	-0.4457	1.6969	-0.0909	-0.1315	0.2373	-0.7046
k = 120	0.0281	-1.1938	0.3771	0.5221	-0.0840	-3.0831	-0.4430	1.7373	-0.0501	-0.1629	0.2434	-0.6913
k = 121	0.6051	-0.9039	-0.5595	0.9496	1.4687	-1.8951	-0.7511	1.0895	0.1840	-0.0246	1.1613	-0.4604
k = 122	0.5806	-0.9257	-0.5650	0.9546	1.5109	-1.8622	-0.7770	1.0863	0.1478	-0.0916	1.1723	-0.5261
k = 123	0.6025	-0.8721	-0.5178	0.9257	1.2767	-1.8489	-0.7278	1.0467	0.0208	-0.2481	0.7567	-0.6107
k = 124	0.6111	-0.8999	-0.5639	0.8733	1.2364	-1.9013	-0.7229	1.0373	0.1114	-0.1574	0.7074	-0.6035
k = 125	0.2352	-0.7169	0.8564	-0.2076	1.4120	-3.0039	-0.2571	1.0103	-0.1540	0.1682	1.1693	-0.8914
k = 126	0.2896	-0.6601	0.8817	-0.2801	1.4223	-3.0286	-0.2233	1.0240	-0.1777	0.1295	1.2421	-0.8552
k = 127	0.2598	-0.5380	1.1368	-0.3197	1.3793	-2.9951	-0.1383	1.0642	-0.1869	-0.1356	0.8822	-0.8082
k = 128	0.2304	-0.4920	1.1095	-0.1956	1.3620	-2.9563	-0.1472	1.0161	-0.2243	-0.1682	0.8009	-0.8246
k = 129	-0.0944	-0.5071	0.9696	2.5495	1.9626	2.2138	-0.7908	0.4027	-0.2265	-0.2821	1.5172	-1.3903
k = 130	-0.2368	-0.5868	0.9424	2.6011	1.9805	2.2490	-0.7918	0.3770	-0.2602	-0.2187	1.7504	-1.3891
k = 131	-0.3064	-0.5449	0.7465	2.3162	2.0680	2.2265	-0.7839	0.2816	-0.0198	-0.6242	1.4787	-1.4271
k = 132	-0.2428	-0.4693	0.8187	2.2141	2.0855	2.1854	-0.7461	0.3281	0.0447	-0.6411	1.2050	-1.4562
k = 133	0.5123	0.1200	0.3546	1.1983	1.0163	2.4996	-0.9905	0.3221	-0.1814	-0.0218	0.5880	-1.3615
k = 134	0.5383	0.1696	0.2849	1.2234	0.9105	2.5032	-1.0048	0.2647	-0.2678	-0.0406	0.7320	-1.3470
k = 135	0.5499	-0.0215	0.4631	1.3581	1.1177	2.6903	-1.0580	0.2389	-0.1944	0.4277	1.0274	-1.2833
k = 136	0.5515	-0.1243	0.5289	1.4228	1.2100	2.7197	-1.0536	0.1985	0.0463	0.4595	0.8914	-1.3050
k = 137	1.1916	-2.3669	2.9898	0.3749	0.7485	1.6420	-1.6625	2.0460	-0.3615	-0.0518	0.2503	-2.1156
k = 138	1.2281	-2.3984	3.0220	0.2378	0.6763	1.6586	-1.8007	2.2849	-0.8407	-0.0759	0.3189	-2.1200
k = 139	1.2026	-2.2299	2.9238	0.2106	0.2126	1.5041	-2.0800	2.5697	-0.3294	0.1061	0.4336	-2.1885
k = 140	1.1660	-2.3333	2.8918	0.2054	0.2724	1.4488	-1.9584	2.4337	-0.4563	0.1394	0.4244	-2.1979
k = 141	0.8225	-1.9489	2.3579	0.9782	0.3983	0.8223	-2.0150	1.8572	-0.5690	-0.2384	0.0042	-1.9634
k = 142	0.8413	-1.7147	2.2273	1.0817	0.3661	0.8220	-1.9707	1.8457	-0.3904	-0.2680	-0.0301	-1.9531
k = 143	1.0191	-1.3296	2.1232	0.8622	0.2517	0.9815	-1.9544	1.9736	-0.0728	0.1054	0.4388	-2.0077
k = 144	1.1562	-1.4082	2.1955	0.7898	0.2713	1.0133	-1.9752	1.9361	-0.2858	0.0919	0.5352	-2.0039
k = 145	0.7028	0.1710	-1.0623	0.6487	-0.5167	2.6951	-0.8780	-0.1733	-0.2712	-0.2849	-0.4479	-2.6043
k = 146	0.6848	0.1156	-1.0208	0.6983	-0.3956	2.6583	-0.8789	-0.1660	0.1032	-0.0962	-0.4813	-2.6821
k = 147	0.6415	-0.1615	-0.6060	1.2257	-0.5043	2.3930	-0.9086	0.0876	0.3274	-0.3332	-0.2641	-2.9608
k = 148	0.6272	-0.1489	-0.4886	1.1671	-0.6277	2.3801	-0.8947	0.1613	0.1639	-0.6720	-0.2223	-2.8689
k = 149	0.3074	-0.5955	0.4180	0.3089	0.0699	2.5166	-0.8506	0.3004	-0.1857	0.4079	-0.1033	-2.0454
k = 150	0.2874	-0.5702	0.1861	0.2968	0.0928	2.5371	-0.8051	0.2843	-0.1177	0.5795	-0.3100	-1.9851

N=6	$n = 1(x)$	$n = 2(x)$	$n = 3(x)$	$n = 4(x)$	$n = 5(x)$	$n = 6(x)$	$n = 1(y)$	$n = 2(y)$	$n = 3(y)$	$n = 4(y)$	$n = 5(y)$	$n = 6(y)$
k = 151	0.2064	-0.4977	0.0261	-0.2089	-0.2778	2.7281	-0.6450	0.2811	0.0746	1.5985	-0.2498	-1.9223
k = 152	0.1737	-0.5440	0.1666	-0.2150	-0.2629	2.7060	-0.6153	0.2880	-0.0624	1.8208	0.0703	-1.9746
k = 153	-0.0198	-0.3448	0.0095	1.7915	1.8861	1.9340	-0.0645	-0.0259	0.0394	-0.2762	1.6841	-1.5173
k = 154	-0.0198	-0.3306	-0.0164	1.8972	1.9888	1.8857	-0.0785	-0.0428	0.1390	-0.5282	1.3903	-1.4652
k = 155	-0.0206	-0.1471	0.0075	2.3782	0.8916	1.0817	-0.0288	-0.1041	-0.0940	-0.8157	0.3507	-0.3768
k = 156	0.0117	-0.1323	-0.0018	2.3012	0.5922	1.0294	-0.0438	-0.0919	-0.1000	-0.8255	0.4184	-0.3434
k = 157	-0.0886	0.2558	-0.0035	1.7526	1.3749	0.6390	-0.0236	0.0798	-0.0378	2.8371	1.4031	-1.5134
k = 158	-0.0635	0.2678	-0.0037	1.7684	1.6932	0.7301	-0.0363	0.0940	0.1624	2.7696	1.4952	-1.6547
k = 159	-0.0502	0.4046	-0.0613	1.0859	1.4657	1.4451	-0.0738	0.3760	-0.0217	1.2425	0.9131	-2.1172
k = 160	-0.0549	0.3836	-0.0395	1.0387	1.2606	1.5110	-0.0871	0.3849	-0.1886	1.2138	0.7983	-2.0708
k = 161	-0.3270	-1.2165	0.0357	0.0378	-0.7923	0.9497	1.4395	1.4344	0.0813	-2.0031	-0.6601	-2.4694
k = 162	-0.3159	-1.2746	-0.0045	0.0726	-0.7182	0.8605	1.4244	1.3531	0.2145	-1.9058	-0.6206	-2.4615
k = 163	-0.4232	-1.7380	0.0658	0.7573	0.4112	1.0106	1.3039	1.2995	-0.0902	-1.5175	0.6119	-2.5975
k = 164	-0.4921	-1.7339	0.0908	0.7108	0.4747	1.0301	1.2993	1.3057	-0.2287	-1.5059	0.6264	-2.6255
k = 165	-0.7256	-2.0073	-0.1142	0.4786	-0.6703	1.2876	1.4184	0.7000	0.1472	1.6970	-0.8278	-2.7854
k = 166	-0.6906	-1.9339	-0.0576	0.5742	-0.7207	1.3021	1.4091	0.7558	0.1994	1.5953	-0.8520	-2.8218
k = 167	-0.5268	-1.4402	-0.1881	0.5242	-0.5293	1.0610	1.3761	1.0078	-0.3413	1.7124	-0.2646	-2.7285
k = 168	-0.4922	-1.4377	-0.3357	0.5411	-0.4938	0.9992	1.3407	0.9192	-0.2090	1.7480	-0.2412	-2.6929
k = 169	-0.4798	-0.8104	1.8564	0.9167	0.4181	1.1557	0.8692	-0.2026	0.7216	-0.2362	0.3161	-2.4499
k = 170	-0.4491	-0.8293	2.0222	0.9433	0.3512	1.1369	0.8483	-0.1047	0.4393	-0.2296	0.2196	-2.4365
k = 171	-0.3388	-0.5372	1.3059	0.3934	0.2160	1.4117	0.8059	0.2284	-0.2050	-0.0272	0.0901	-2.5822
k = 172	-0.3519	-0.4947	1.1372	0.2639	0.1954	1.4597	0.8146	0.1624	-0.1437	0.0303	0.1894	-2.6053
k = 173	0.0162	-0.2164	-0.0803	-0.0696	0.9964	1.9902	0.9622	-0.2414	0.0131	0.2860	0.9420	-2.5228
k = 174	-0.0166	-0.2127	-0.0763	-0.0828	1.1045	1.9769	0.9860	-0.1144	0.1253	0.2010	0.9112	-2.4975
k = 175	-0.0781	-0.5769	0.1468	0.2633	0.8884	1.7540	1.0485	-0.0563	0.2105	-0.0506	0.8322	-2.0216
k = 176	-0.1071	-0.6041	0.2144	0.3301	0.8704	1.7162	1.0903	-0.0971	0.1995	-0.1262	0.8641	-1.9793
k = 177	-0.9496	-2.0372	2.2672	1.3593	0.3935	-0.3607	1.1180	-0.4106	0.1734	1.0911	0.3664	-1.0450
k = 178	-0.9342	-2.0838	2.3825	1.4002	0.3837	-0.3493	1.1569	-0.4024	0.2549	1.2135	0.3065	-1.0179
k = 179	-1.0056	-1.8742	2.4970	1.5848	0.5476	-0.3301	1.4525	-0.3242	0.5355	1.2366	0.4992	-1.1951
k = 180	-1.0023	-1.8570	2.4762	1.5558	0.5418	-0.3457	1.4324	-0.2866	0.4421	1.2265	0.6251	-1.2545
k = 181	-1.1828	-0.7676	1.4377	1.4503	1.9534	-0.0850	1.5421	-0.1538	0.1775	0.9300	1.9631	-1.7555
k = 182	-1.1928	-0.7540	1.3838	1.4620	2.0107	-0.0973	1.4878	-0.2137	0.2523	0.9535	1.9282	-1.8091
k = 183	-1.1284	-0.8937	1.5143	1.6648	1.6574	-0.1810	1.0135	-0.0284	0.2215	1.3678	1.7228	-1.7945
k = 184	-1.1352	-0.8899	1.4875	1.6926	1.5673	-0.1968	0.9851	-0.0370	0.2521	1.4417	1.5658	-1.7233
k = 185	0.0583	-3.8317	1.4022	0.9929	0.0938	0.1958	-1.0235	-0.8037	0.2881	0.5701	0.0304	-0.7179
k = 186	0.0605	-3.8686	1.3700	0.9320	0.0418	0.1371	-1.0164	-0.8491	0.1629	0.5674	0.0628	-0.6664
k = 187	0.1293	-4.1577	0.8126	0.5324	0.1344	-0.7867	-0.7222	-0.9631	0.1416	0.5148	0.0168	-0.5145
k = 188	0.1357	-4.2060	0.7810	0.4965	0.1969	-0.5973	-0.6910	-0.8446	0.1392	0.5331	0.0948	-0.5409
k = 189	0.1272	-5.3642	0.5838	0.9144	0.3952	0.1784	-0.3083	-1.1980	0.0669	0.7253	0.6908	-0.9900
k = 190	0.1117	-5.3154	0.6615	0.9874	0.5145	0.1875	-0.3294	-1.2029	0.1780	0.6942	0.7897	-1.0223
k = 191	-0.1356	-4.5007	1.1220	1.2017	0.8508	0.5780	-0.5330	-0.4900	0.1166	0.7745	0.9192	-1.3007
k = 192	-0.1733	-4.5080	1.1872	1.1992	0.8174	0.5995	-0.5066	-0.6157	0.1222	0.7939	0.8399	-1.3228
k = 193	-0.3349	-0.9998	1.6262	0.9219	0.7538	-0.2453	-0.3007	-0.1997	0.3696	0.8733	0.5549	2.8623
k = 194	-0.3104	-0.9708	1.6377	0.8722	0.7831	-0.2406	-0.2739	-0.0418	0.3177	0.8636	0.6088	2.8904
k = 195	-0.3024	-0.8962	1.1367	0.8521	0.5952	-0.3589	-0.1057	-0.1265	0.1522	0.5266	1.0456	3.2626
k = 196	-0.2967	-0.8330	1.0458	0.8122	0.5482	-0.4160	-0.1012	-0.1251	0.1969	0.5016	0.9805	3.2696
k = 197	-0.1017	-0.6261	0.2750	-0.6968	-0.4535	-1.3333	-0.1112	-0.0324	-0.0557	-0.5520	-0.8840	2.9932
k = 198	-0.0902	-0.6255	0.2463	-0.6702	-0.7111	-1.3368	-0.1237	-0.0995	-0.1273	-0.5690	-1.1536	2.9233
k = 199	0.0497	-0.6823	0.2847	-0.9331	-0.8143	-1.0390	-0.2488	-0.0475	0.1818	-0.6148	-0.8406	2.6717
k = 200	0.0689	-0.7172	0.3513	-0.9975	-0.7025	-1.0388	-0.2702	0.0061	0.3086	-0.6235	-0.4561	2.6986

N=6	$n = 1(x)$	$n = 2(x)$	$n = 3(x)$	$n = 4(x)$	$n = 5(x)$	$n = 6(x)$	$n = 1(y)$	$n = 2(y)$	$n = 3(y)$	$n = 4(y)$	$n = 5(y)$	$n = 6(y)$
k = 201	1.1196	-1.6865	1.9221	0.9552	1.5294	1.3599	-0.4078	-0.2731	0.2533	0.6772	2.0264	2.1558
k = 202	1.1349	-1.7159	1.9264	1.1179	1.8273	1.3946	-0.4213	-0.2997	0.1622	0.7578	2.1256	2.2379
k = 203	1.2277	-1.7526	2.5627	1.8588	1.6513	1.3541	-0.6620	-0.0412	0.5539	1.5613	1.9445	1.9814
k = 204	1.2299	-1.7279	2.5632	1.8747	1.4071	1.3074	-0.6490	-0.1024	0.5291	1.5492	1.7184	1.8322
k = 205	1.3778	-1.4168	2.0113	0.5105	0.1008	-0.1845	-0.9702	-0.3863	0.2273	0.3291	0.3627	0.7520
k = 206	1.3660	-1.4271	1.9890	0.4478	-0.0432	-0.1259	-0.9702	-0.2545	0.3732	0.3196	0.3348	0.6827
k = 207	1.1910	-1.5209	1.5715	0.3430	0.3636	-0.2304	-0.8098	0.0636	0.4625	0.2441	0.4264	0.7726
k = 208	1.1765	-1.5466	1.6268	0.2474	0.4554	-0.2045	-0.8114	-0.0090	0.3192	0.2008	0.3262	0.8338
k = 209	0.1590	-0.7358	0.1103	0.2886	0.9419	0.4144	-0.3466	-0.2470	-0.2428	0.4544	1.3347	1.7408
k = 210	0.1492	-0.7359	0.0250	0.2787	1.1776	0.2586	-0.3358	-0.2392	-0.0743	0.3588	1.6329	1.9860
k = 211	0.1189	-0.6899	-0.0292	0.2801	0.7046	0.1690	-0.3206	-0.0801	0.1240	-0.0637	1.9251	2.5898
k = 212	0.0899	-0.6674	-0.0503	0.1980	0.5735	0.2173	-0.3279	-0.0265	0.1124	-0.1090	1.9579	2.5374
k = 213	-0.2147	-0.5758	0.2956	-0.5897	0.4734	1.0352	0.0048	0.0749	0.0596	-0.1436	-0.4452	2.6003
k = 214	-0.2117	-0.5448	0.2688	-0.4412	0.2543	1.0690	0.0117	0.0413	-0.0193	0.0245	-0.7625	2.4530
k = 215	-0.2570	-0.4782	0.1911	0.4524	-0.4810	1.4522	0.0630	-0.1399	0.0287	0.0955	-1.6327	1.9456
k = 216	-0.2404	-0.4796	0.1761	0.7458	-0.4917	1.4473	0.0797	-0.1146	0.1238	0.0805	-1.6254	1.9616
k = 217	-0.5382	-0.4187	0.4222	0.4093	-0.0430	-0.0095	0.6776	-0.1651	0.0345	-0.0857	0.7077	1.1296
k = 218	-0.5256	-0.4393	0.8077	-0.4115	0.2395	0.0218	0.6258	-0.1313	0.0816	-0.1192	0.9515	1.1677
k = 219	-0.5213	-0.5515	1.4765	-1.7035	1.8078	-0.1180	0.4546	0.1524	0.3135	-0.0785	1.8307	1.9674
k = 220	-0.5125	-0.5680	1.2811	-1.2654	1.6509	-0.0739	0.4603	0.1174	0.2827	0.1161	1.6869	2.1917
k = 221	-0.2492	-0.6624	1.1015	-1.0074	-0.5910	0.2746	0.2981	-0.0735	0.2431	1.6447	-0.4870	2.5569
k = 222	-0.2677	-0.6675	0.6319	-0.4702	-0.4803	0.2168	0.2945	-0.1431	0.1434	1.5775	-0.3644	2.5586
k = 223	-0.1949	-0.5535	-0.2063	1.3271	-0.2794	-0.0074	0.3028	-0.2320	-0.0821	1.9775	-0.1201	1.8569
k = 224	-0.1977	-0.5424	0.0859	0.9470	-0.3777	-0.0213	0.3014	-0.1313	-0.0322	1.8967	-0.3051	1.6785
k = 225	-0.3718	-1.6200	-0.3150	1.4775	-1.0228	0.3618	-0.9877	-0.1185	-0.0357	1.6503	-1.0915	1.7019
k = 226	-0.3721	-1.5868	-0.0911	0.8906	-1.2985	0.3558	-0.9819	-0.1684	0.0496	1.7476	-1.1053	1.4912
k = 227	-0.3077	-1.5456	0.3007	-1.1328	-1.7990	0.3912	-0.8890	-0.3583	0.0513	1.9704	-1.6720	1.1074
k = 228	-0.3168	-1.5463	0.0580	-0.7709	-1.2209	0.4775	-0.8801	-0.3717	-0.0449	1.7962	-1.2447	1.1950
k = 229	-0.4471	-1.4773	-0.1135	0.2837	2.1164	1.1469	-0.8768	-0.1756	-0.0349	2.2304	2.0038	2.2034
k = 230	-0.4591	-1.5045	0.0168	0.7643	2.2299	1.1559	-0.8798	-0.1284	0.0220	2.6063	2.2135	2.3239
k = 231	-0.4994	-1.6514	0.0080	2.6951	2.2041	0.7106	-0.9718	-0.1576	0.0210	2.0813	1.8239	1.5467
k = 232	-0.4791	-1.6706	-0.0747	2.1722	2.0468	0.6464	-0.9816	-0.1736	0.0406	1.4683	1.2925	1.2272
k = 233	0.3812	-1.9942	0.0447	-0.6058	-2.5807	0.8223	0.6001	-0.5351	-0.0365	0.4803	-2.1595	3.4961
k = 234	0.3900	-1.9960	0.0784	-1.0293	-3.2078	1.1468	0.6066	-0.5447	-0.0825	0.5255	-2.5562	4.3168
k = 235	0.4514	-1.9756	-0.0405	-0.2765	-1.3059	0.4568	0.7645	-0.3994	0.0211	-0.4963	-1.1186	4.1125
k = 236	0.4476	-1.9616	-0.0752	0.0301	-0.7541	0.0379	0.7714	-0.3484	0.1192	-0.1839	-0.5159	3.7263
k = 237	0.3295	-1.7925	-0.0723	1.6845	3.3838	-2.9912	0.7789	-0.1528	-0.0443	-0.2513	2.8123	3.9116
k = 238	0.3271	-1.7782	-0.0078	1.5019	2.8939	-2.5654	0.7783	-0.1916	-0.1232	0.1136	2.7267	3.7223
k = 239	0.2344	-1.6242	0.1427	-0.3284	0.7587	-1.0538	0.7190	-0.1066	0.1050	0.8899	1.0389	1.7359
k = 240	0.2463	-1.6183	0.0759	-0.0328	1.0479	-0.8447	0.7178	-0.1023	0.0707	0.3537	0.9658	1.6636
k = 241	-0.2385	-0.8197	-0.1091	-0.8488	0.5594	-0.2734	-0.4430	-0.2429	-0.0813	-0.3277	0.4290	-0.1884
k = 242	-0.2202	-0.8222	-0.0750	-1.0493	0.5221	-0.4822	-0.4441	-0.2346	-0.0511	-0.2937	0.4655	-0.1208
k = 243	-0.2060	-0.8797	-0.0486	-0.1705	0.6681	-0.8952	-0.3931	-0.2383	0.0045	0.5508	0.8164	0.9718
k = 244	-0.2100	-0.8692	-0.0341	-0.1881	0.4491	-0.7954	-0.3876	-0.2340	0.0554	0.8654	0.7043	1.0929
k = 245	-0.3806	-0.8159	0.0755	0.4334	-2.9486	3.2766	-0.4314	-0.1102	0.0275	0.8773	-2.9326	4.9972
k = 246	-0.4013	-0.8095	0.0685	0.6805	-3.1261	3.2789	-0.4255	-0.1158	-0.0353	0.5578	-3.1009	5.2838
k = 247	-0.5431	-0.7771	0.0281	-0.3681	-0.9709	0.9292	-0.5540	0.1077	-0.0144	-1.5067	-0.9754	0.8276
k = 248	-0.5317	-0.7820	-0.0102	-0.5741	-0.7155	0.7998	-0.5806	0.1202	-0.0367	-1.2159	-0.7936	0.7255
k = 249	-0.1417	-1.8732	-0.0244	0.4773	1.4360	1.8676	1.2786	-0.0383	0.0492	-0.4444	1.8733	-1.0066
k = 250	-0.1227	-1.8891	0.0246	0.5818	1.7144	2.3070	1.2611	-0.1036	0.0966	-0.8142	2.0100	-0.9822

N=6	$n = 1(x)$	$n = 2(x)$	$n = 3(x)$	$n = 4(x)$	$n = 5(x)$	$n = 6(x)$	$n = 1(y)$	$n = 2(y)$	$n = 3(y)$	$n = 4(y)$	$n = 5(y)$	$n = 6(y)$
k = 251	-0.0520	-2.0500	-0.0536	0.5140	2.6572	3.0671	1.3133	-0.3175	-0.0823	-0.1203	2.3529	-0.3388
k = 252	-0.0472	-2.0756	-0.0852	0.0689	2.3271	2.8412	1.3320	-0.2502	-0.1150	0.3199	2.0874	-0.1320
k = 253	0.2175	-2.3130	0.0260	-0.1380	0.4563	0.8569	1.3764	-0.0880	0.0777	2.1937	0.8583	-0.1268
k = 254	0.1941	-2.3264	0.0729	0.3005	0.4196	0.6430	1.3650	-0.1495	0.0515	1.9236	0.8329	-0.1963
k = 255	-0.0850	-2.4339	0.0270	-0.1988	-0.3601	0.2164	1.2893	-0.1860	0.0182	-1.3240	-0.5156	0.2259
k = 256	-0.1420	-2.4330	-0.0509	-0.4027	-0.6550	0.3594	1.2772	-0.1399	-0.0505	-2.1853	-0.8459	0.2793