

Lab 1

Part 1

Result Matrix:

506	440	374	308	242	176	110	44	-22	-88
572	494	416	338	260	182	104	26	-52	-130
638	548	458	368	278	188	98	8	-82	-172
704	602	500	398	296	194	92	-10	-112	-214
770	656	542	428	314	200	86	-28	-142	-256
836	710	584	458	332	206	80	-46	-172	-298
902	764	626	488	350	212	74	-64	-202	-340
968	818	668	518	368	218	68	-82	-232	-382
1034	872	710	548	386	224	62	-100	-262	-424
1100	926	752	578	404	230	56	-118	-292	-466
1166	980	794	608	422	236	50	-136	-322	-508
1232	1034	836	638	440	242	44	-154	-352	-550
1298	1088	878	668	458	248	38	-172	-382	-592
1364	1142	920	698	476	254	32	-190	-412	-634
1430	1196	962	728	494	260	26	-208	-442	-676
1496	1250	1004	758	512	266	20	-226	-472	-718
1562	1304	1046	788	530	272	14	-244	-502	-760
1628	1358	1088	818	548	278	8	-262	-532	-802
1694	1412	1130	848	566	284	2	-280	-562	-844
1760	1466	1172	878	584	290	-4	-298	-592	-886
1826	1520	1214	908	602	296	-10	-316	-622	-928
1892	1574	1256	938	620	302	-16	-334	-652	-970
1958	1628	1298	968	638	308	-22	-352	-682	-1012

2024	1682	1340	998	656	314	-28	-370	-712	-1054
2090	1736	1382	1028	674	320	-34	-388	-742	-1096
2156	1790	1424	1058	692	326	-40	-406	-772	-1138
2222	1844	1466	1088	710	332	-46	-424	-802	-1180
2288	1898	1508	1118	728	338	-52	-442	-832	-1222
2354	1952	1550	1148	746	344	-58	-460	-862	-1264
2420	2006	1592	1178	764	350	-64	-478	-892	-1306
2486	2060	1634	1208	782	356	-70	-496	-922	-1348
2552	2114	1676	1238	800	362	-76	-514	-952	-1390
2618	2168	1718	1268	818	368	-82	-532	-982	-1432
2684	2222	1760	1298	836	374	-88	-550	-1012	-1474
2750	2276	1802	1328	854	380	-94	-568	-1042	-1516
2816	2330	1844	1358	872	386	-100	-586	-1072	-1558
2882	2384	1886	1388	890	392	-106	-604	-1102	-1600
2948	2438	1928	1418	908	398	-112	-622	-1132	-1642
3014	2492	1970	1448	926	404	-118	-640	-1162	-1684
3080	2546	2012	1478	944	410	-124	-658	-1192	-1726
3146	2600	2054	1508	962	416	-130	-676	-1222	-1768
3212	2654	2096	1538	980	422	-136	-694	-1252	-1810
3278	2708	2138	1568	998	428	-142	-712	-1282	-1852
3344	2762	2180	1598	1016	434	-148	-730	-1312	-1894
3410	2816	2222	1628	1034	440	-154	-748	-1342	-1936
3476	2870	2264	1658	1052	446	-160	-766	-1372	-1978
3542	2924	2306	1688	1070	452	-166	-784	-1402	-2020
3608	2978	2348	1718	1088	458	-172	-802	-1432	-2062
3674	3032	2390	1748	1106	464	-178	-820	-1462	-2104
3740	3086	2432	1778	1124	470	-184	-838	-1492	-2146
3806	3140	2474	1808	1142	476	-190	-856	-1522	-2188
3872	3194	2516	1838	1160	482	-196	-874	-1552	-2230
3938	3248	2558	1868	1178	488	-202	-892	-1582	-2272

4004	3302	2600	1898	1196	494	-208	-910	-1612	-2314
4070	3356	2642	1928	1214	500	-214	-928	-1642	-2356
4136	3410	2684	1958	1232	506	-220	-946	-1672	-2398
4202	3464	2726	1988	1250	512	-226	-964	-1702	-2440
4268	3518	2768	2018	1268	518	-232	-982	-1732	-2482
4334	3572	2810	2048	1286	524	-238	-1000	-1762	-2524
4400	3626	2852	2078	1304	530	-244	-1018	-1792	-2566

Elapsed time of worker 0: 0.000000s

Elapsed time of worker 1: 0.000015s

Elapsed time of worker 2: 0.000016s

Elapsed time of worker 3: 0.000072s

Elapsed time of worker 4: 0.000024s

Elapsed time of worker 5: 0.000013s

Elapsed time of worker 6: 0.000013s

Max time: 0.000072s

Total time: 0.000151s

Master elapsed time: 0.086787s

Part 2

N=100k, number of ranks varied:

R (# ranks)	Estimated result	Elapsed time
4	17.831822	0.023314
8	17.978398	0.035604
16	17.772067	0.051466
32	17.791280	0.340765

R=32, iterations varied:

N (# iterations)	Estimated result	Elapsed time
100	22.195654	0.428796
1k	17.214723	0.351122
10k	17.464632	0.312833
100k	17.791280	0.340765

Part 3

N=100k, number of ranks varied:

R (# ranks)	Estimated result	Elapsed time
4	22.289250	0.027236
8	20.246026	0.028348
16	18.849472	0.087693
32	18.335116	0.246642

R=32, iterations varied:

N (# iterations)	Estimated result	Elapsed time
100	22.195654	0.356306
1k	18.009771	0.273640
10k	18.012085	0.162618
100k	18.335116	0.050142