

### Lab Results:

#### Coefficients of A (Alg1):

[5, 5, 7, 6, 9, 9, 3, 7, 7, 0, 7, 6, 3, 3, 6, 5, 9, 8, 0, 6, 1, 4, 3, 5, 6, 5, 7, 7, 6, 5, 2, 2, 1, 9, 2, 7, 8, 0, 5, 6, 6, 2, 0, 3, 7, 4, 5, 9, 2, 4, 8, 1, 3, 3, 3, 0, 5, 9, 9, 8, 6, 7, 3, 4, 0, 3, 1, 4, 9, 4, 4, 2, 9, 3, 3, 6, 1, 3, 6, 3, 5, 7, 9, 5, 2, 2, 6, 4, 1, 1, 2, 6, 1, 9, 0, 6, 3, 4, 1, 9]

#### Coefficients of B (Alg1):

[4, 5, 0, 7, 4, 5, 8, 9, 2, 9, 4, 7, 2, 8, 7, 6, 9, 3, 0, 7, 7, 5, 7, 6, 5, 1, 5, 9, 8, 8, 7, 0, 3, 1, 4, 1, 8, 7, 6, 8, 0, 8, 3, 4, 8, 5, 1, 2, 8, 5, 5, 4, 1, 4, 3, 8, 5, 3, 5, 7, 1, 6, 0, 8, 8, 7, 5, 1, 6, 8, 0, 2, 4, 1, 5, 8, 4, 2, 9, 2, 2, 9, 4, 0, 3, 3, 2, 7, 7, 1, 8, 7, 8, 8, 6, 4, 3, 7, 5, 7]

#### Coefficients of A (FFT):

[0, 0, 1, 3, 1, 7, 1, 0, 0, 5, 1, 2, 7, 5, 4, 3, 7, 0, 7, 0, 9, 9, 4, 6, 3, 5, 9, 0, 9, 6, 0, 4, 4, 0, 3, 0, 7, 4, 5, 0, 2, 4, 8, 4, 7, 2, 4, 3, 6, 0, 3, 0, 2, 3, 5, 9, 0, 0, 9, 9, 1, 4, 2, 0, 4, 6, 7, 4, 5, 4, 7, 0, 7, 6, 1, 3, 2, 4, 5, 5, 1, 3, 1, 1, 6, 0, 0, 9, 2, 6, 2, 3, 5, 9, 3, 3, 6, 3, 6, 5]

#### Coefficients of B (FFT):

[6, 2, 4, 3, 9, 9, 8, 6, 8, 4, 9, 4, 5, 2, 8, 6, 0, 3, 1, 3, 8, 4, 9, 5, 1, 0, 6, 2, 3, 4, 7, 1, 6, 3, 9, 9, 3, 6, 4, 5, 2, 0, 8, 3, 0, 3, 0, 1, 3, 6, 8, 0, 2, 9, 6, 6, 8, 0, 2, 7, 2, 3, 0, 5, 4, 0, 8, 4, 3, 1, 3, 4, 6, 6, 9, 4, 7, 8, 2, 0, 6, 4, 5, 0, 9, 9, 7, 0, 1, 0, 8, 6, 9, 4, 2, 6, 0, 5, 5, 7]

#### Results for d = 100

Alg1: [20, 45, 53, 94, 121, 175, 192, 250, 303, 303, 339, 434, 355, 416, 482, 466, 522, 603, 538, 577, 628, 638, 634, 695, 738, 677, 760, 797, 808, 830, 972, 905, 943, 923, 921, 878, 966, 950, 998, 1075, 1083, 1067, 1118, 1137, 1189, 1141, 1194, 1160, 1143, 1284, 1219, 1247, 1294, 1377, 1277, 1415, 1332, 1284, 1352, 1378, 1500, 1447, 1460, 1649, 1529, 1624, 1660, 1599, 1596, 1657, 1618, 1633, 1774, 1695, 1776, 1687, 1748, 1777, 1710, 1822, 1816, 1841, 1901, 1931, 1893, 1938, 1963, 1863, 2109, 1993, 1837, 2081, 2052, 1944, 2179, 2229, 2120, 2251, 2258, 2158, 2160, 2139, 2337, 1984, 2196, 2014, 1985, 1968, 2001, 1989, 1860, 1857, 1757, 1850, 1816, 1755, 1784, 1603, 1655, 1652, 1639, 1659, 1648, 1634, 1459, 1620, 1543, 1470, 1394, 1280, 1253, 1401, 1348, 1248, 1330, 1306, 1302, 1365, 1273, 1116, 1162, 1171, 1046, 1129, 1104, 991, 1120, 1074, 1006, 1051, 1078, 944, 916, 876, 925, 886, 967, 804, 832, 795, 832, 677, 783, 662, 663, 674, 583, 646, 638, 569, 530, 616, 526, 560, 598, 472, 425, 491, 408, 393, 430, 367, 245, 332, 294, 300, 288, 267, 215, 249, 255, 186, 208, 121, 124, 75, 96, 52, 63]

FFT: [6, 20, 16, 59, 42, 69, 69, 135, 122, 133, 144, 197, 184, 222, 254, 279, 301, 312, 387, 334, 392, 418, 462, 503, 588, 507, 583, 521, 564, 611, 622, 621, 614, 682, 645, 577, 678, 589, 713, 651, 771, 748, 744, 657, 861, 795, 948, 744, 884, 866, 877, 777, 883, 949, 858, 833, 1096, 942, 967, 906, 1007, 1086, 1042, 1064, 1062, 934, 1163, 1053, 1178, 1140, 1114, 1176, 1216, 1230, 1353, 1259, 1337, 1389, 1298, 1375, 1292, 1124, 1351, 1280, 1252, 1476, 1299, 1437, 1376, 1348, 1550, 1499, 1517, 1604, 1587, 1732, 1701, 1535, 1696, 1649, 1718, 1656, 1688, 1461, 1505, 1565, 1623, 1424, 1473, 1475, 1404, 1503, 1461, 1348, 1261, 1248, 1446, 1354, 1288, 1357, 1303, 1136, 1132, 1121, 1239, 1174, 1233, 1123, 1010, 1103, 1142, 1041, 1019, 1013, 982, 878, 905, 968, 991, 898, 884, 991, 825, 926, 899, 845, 798, 831, 901, 837, 849, 791, 756, 659, 686, 731, 702, 645, 619, 616, 606, 677, 680, 647, 498, 557, 529, 604, 518, 517, 476, 485, 421, 380, 359, 389, 366, 393, 294, 294, 321, 326, 313, 254, 266, 206, 259, 205, 217, 206, 143, 112, 96, 87, 76, 67, 35]

#### Runtimes:

Alg1 Runtimes: 100: 0.00187, 1000: 0.15106, 10000: 15.25722

FFT Runtimes: 100: 0.00579, 1000: 0.0481, 10000: 0.95342