Testing average cycles for attraction strength 0.6  
Number of cycles run: 3968  
Number of cycles run: 2516  
Number of cycles run: 2699  
Number of cycles run: 3819  
Number of cycles run: 49972  
Number of cycles run: 8438  
Number of cycles run: 38216  
Number of cycles run: 10908  
Number of cycles run: 1576  
Number of cycles run: 6573  
Number of cycles run: 2400  
Number of cycles run: 702  
Number of cycles run: 8162  
Number of cycles run: 7163  
Number of cycles run: 655  
Number of cycles run: 14530  
Number of cycles run: 534  
Number of cycles run: 3502  
Number of cycles run: 2324  
Number of cycles run: 433  
Number of cycles run: 1914  
Number of cycles run: 2077  
Number of cycles run: 1485  
Number of cycles run: 3957  
Number of cycles run: 4609  
Number of cycles run: 11430  
Number of cycles run: 1597  
Number of cycles run: 3549  
Number of cycles run: 7308  
Number of cycles run: 1185  
Number of cycles run: 10407  
Number of cycles run: 50000  
Number of cycles run: 3110  
Number of cycles run: 3582  
Number of cycles run: 2673  
Number of cycles run: 3201  
Number of cycles run: 11783  
Number of cycles run: 3731  
Number of cycles run: 7516  
Number of cycles run: 5787  
Number of cycles run: 4686  
Number of cycles run: 50000  
Number of cycles run: 2488  
Number of cycles run: 6273  
Number of cycles run: 3461  
Number of cycles run: 2280  
Number of cycles run: 3861  
Number of cycles run: 1589  
Number of cycles run: 3921  
Number of cycles run: 3504  
Number of cycles run: 993  
Number of cycles run: 10874  
Number of cycles run: 1709  
Number of cycles run: 11484  
Number of cycles run: 2468  
Number of cycles run: 19201  
Number of cycles run: 1162  
Number of cycles run: 4164  
Number of cycles run: 6479  
Number of cycles run: 2241  
Number of cycles run: 2397  
Number of cycles run: 1800  
Number of cycles run: 1997  
Number of cycles run: 1038  
Number of cycles run: 711  
Number of cycles run: 2334  
Number of cycles run: 838  
Number of cycles run: 8803  
Number of cycles run: 462  
Number of cycles run: 8347  
Number of cycles run: 1344  
Number of cycles run: 7204  
Number of cycles run: 3770  
Number of cycles run: 4834  
Number of cycles run: 2435  
Number of cycles run: 12163  
Number of cycles run: 962  
Number of cycles run: 1900  
Number of cycles run: 9101  
Number of cycles run: 1098  
Number of cycles run: 50000  
Number of cycles run: 3500  
Number of cycles run: 614  
Number of cycles run: 2148  
Number of cycles run: 1055  
Number of cycles run: 10708  
Number of cycles run: 3203  
Number of cycles run: 3493  
Number of cycles run: 2686  
Number of cycles run: 1955  
Number of cycles run: 2175  
Number of cycles run: 1826  
Number of cycles run: 2083  
Number of cycles run: 1655  
Number of cycles run: 16184  
Number of cycles run: 427  
Number of cycles run: 4206  
Number of cycles run: 3619  
Number of cycles run: 2555  
Number of cycles run: 2078  
Av cycles for attraction strength 0.6 is 6425  
standard diviation is 10255.761900251315  
Testing average cycles for attraction strength 0.6  
Number of cycles run: 2558  
Number of cycles run: 14258  
Number of cycles run: 5133  
Number of cycles run: 6802  
Number of cycles run: 4620  
Number of cycles run: 3537  
Number of cycles run: 3084  
Number of cycles run: 2943  
Number of cycles run: 7078  
Number of cycles run: 752  
Number of cycles run: 1031  
Number of cycles run: 1995  
Number of cycles run: 1428  
Number of cycles run: 6956  
Number of cycles run: 629  
Number of cycles run: 9334  
Number of cycles run: 1709  
Number of cycles run: 50000  
Number of cycles run: 3996  
Number of cycles run: 5241  
Number of cycles run: 4004  
Number of cycles run: 2364  
Number of cycles run: 2012  
Number of cycles run: 2137  
Number of cycles run: 12515  
Number of cycles run: 1921  
Number of cycles run: 4850  
Number of cycles run: 2217  
Number of cycles run: 16663  
Number of cycles run: 12387  
Number of cycles run: 991  
Number of cycles run: 50000  
Number of cycles run: 5927  
Number of cycles run: 1137  
Number of cycles run: 13016  
Number of cycles run: 2772  
Number of cycles run: 5025  
Number of cycles run: 606  
Number of cycles run: 4455  
Number of cycles run: 830  
Number of cycles run: 450  
Number of cycles run: 5055  
Number of cycles run: 3212  
Number of cycles run: 2202  
Number of cycles run: 2353  
Number of cycles run: 5698  
Number of cycles run: 50000  
Number of cycles run: 16231  
Number of cycles run: 399  
Number of cycles run: 3078  
Number of cycles run: 4447  
Number of cycles run: 50000  
Number of cycles run: 1346  
Number of cycles run: 659  
Number of cycles run: 8188  
Number of cycles run: 3632  
Number of cycles run: 3955  
Number of cycles run: 3945  
Number of cycles run: 4272  
Number of cycles run: 2351  
Number of cycles run: 50000  
Number of cycles run: 448  
Number of cycles run: 4942  
Number of cycles run: 4271  
Number of cycles run: 3386  
Number of cycles run: 50000  
Number of cycles run: 500  
Number of cycles run: 50000  
Number of cycles run: 34749  
Number of cycles run: 400  
Number of cycles run: 2075  
Number of cycles run: 2149  
Number of cycles run: 14575  
Number of cycles run: 50000  
Number of cycles run: 618  
Number of cycles run: 2708  
Number of cycles run: 7046  
Number of cycles run: 1385  
Number of cycles run: 13386  
Number of cycles run: 9150  
Number of cycles run: 2088  
Number of cycles run: 1751  
Number of cycles run: 50000  
Number of cycles run: 2091  
Number of cycles run: 3319  
Number of cycles run: 3011  
Number of cycles run: 7088  
Number of cycles run: 3855  
Number of cycles run: 1465  
Number of cycles run: 984  
Number of cycles run: 5879  
Number of cycles run: 6576  
Number of cycles run: 6248  
Number of cycles run: 19449  
Number of cycles run: 3238  
Number of cycles run: 2546  
Number of cycles run: 5669  
Number of cycles run: 7175  
Number of cycles run: 469  
Number of cycles run: 2251  
Av cycles for attraction strength 0.6 is 8873  
standard diviation is 13900.018674226243  
Testing average cycles for attraction strength 0.6  
Number of cycles run: 9213  
Number of cycles run: 2442  
Number of cycles run: 1974  
Number of cycles run: 19224  
Number of cycles run: 2434  
Number of cycles run: 50000  
Number of cycles run: 1014  
Number of cycles run: 2701  
Number of cycles run: 2302  
Number of cycles run: 846  
Number of cycles run: 3041  
Number of cycles run: 7612  
Number of cycles run: 2456  
Number of cycles run: 2604  
Number of cycles run: 488  
Number of cycles run: 8671  
Number of cycles run: 7960  
Number of cycles run: 2029  
Number of cycles run: 13714  
Number of cycles run: 2884  
Number of cycles run: 2631  
Number of cycles run: 1575  
Number of cycles run: 3150  
Number of cycles run: 10692  
Number of cycles run: 4513  
Number of cycles run: 1673  
Number of cycles run: 10513  
Number of cycles run: 42945  
Number of cycles run: 992  
Number of cycles run: 3926  
Number of cycles run: 4285  
Number of cycles run: 50000  
Number of cycles run: 1843  
Number of cycles run: 2869  
Number of cycles run: 21061  
Number of cycles run: 4838  
Number of cycles run: 780  
Number of cycles run: 2333  
Number of cycles run: 50000  
Number of cycles run: 6148  
Number of cycles run: 10680  
Number of cycles run: 2724  
Number of cycles run: 659  
Number of cycles run: 3368  
Number of cycles run: 4119  
Number of cycles run: 683  
Number of cycles run: 18974  
Number of cycles run: 2309  
Number of cycles run: 971  
Number of cycles run: 1941  
Number of cycles run: 5606  
Number of cycles run: 2808  
Number of cycles run: 50000  
Number of cycles run: 2661  
Number of cycles run: 1828  
Number of cycles run: 35522  
Number of cycles run: 3126  
Number of cycles run: 10391  
Number of cycles run: 456  
Number of cycles run: 5297  
Number of cycles run: 20357  
Number of cycles run: 3124  
Number of cycles run: 558  
Number of cycles run: 8088  
Number of cycles run: 15042  
Number of cycles run: 9492  
Number of cycles run: 3623  
Number of cycles run: 5577  
Number of cycles run: 694  
Number of cycles run: 1294  
Number of cycles run: 5570  
Number of cycles run: 3222  
Number of cycles run: 5546  
Number of cycles run: 836  
Number of cycles run: 6766  
Number of cycles run: 2172  
Number of cycles run: 3633  
Number of cycles run: 50000  
Number of cycles run: 50000  
Number of cycles run: 5707  
Number of cycles run: 3684  
Number of cycles run: 3530  
Number of cycles run: 25767  
Number of cycles run: 466  
Number of cycles run: 3479  
Number of cycles run: 4473  
Number of cycles run: 2640  
Number of cycles run: 2801  
Number of cycles run: 4008  
Number of cycles run: 1657  
Number of cycles run: 9726

Number of cycles run: 1455  
Number of cycles run: 2818  
Number of cycles run: 50000  
Number of cycles run: 1468  
Number of cycles run: 2166  
Number of cycles run: 6790  
Number of cycles run: 2183  
Number of cycles run: 3998  
Number of cycles run: 776  
Av cycles for attraction strength 0.6 is 8696  
standard diviation is 13274.151962012716  
Testing average cycles for attraction strength 0.6  
Number of cycles run: 3077  
Number of cycles run: 848  
Number of cycles run: 3578  
Number of cycles run: 3443  
Number of cycles run: 4342  
Number of cycles run: 12666  
Number of cycles run: 1843  
Number of cycles run: 50000  
Number of cycles run: 10055  
Number of cycles run: 2752  
Number of cycles run: 50000  
Number of cycles run: 6824  
Number of cycles run: 3528  
Number of cycles run: 13136  
Number of cycles run: 10692  
Number of cycles run: 5477  
Number of cycles run: 50000  
Number of cycles run: 5151  
Number of cycles run: 1811  
Number of cycles run: 487  
Number of cycles run: 1547  
Number of cycles run: 9064  
Number of cycles run: 3123  
Number of cycles run: 2528  
Number of cycles run: 5911  
Number of cycles run: 558  
Number of cycles run: 1824  
Number of cycles run: 3246  
Number of cycles run: 4127  
Number of cycles run: 976  
Number of cycles run: 2329  
Number of cycles run: 1802  
Number of cycles run: 50000  
Number of cycles run: 2131  
Number of cycles run: 1751  
Number of cycles run: 444  
Number of cycles run: 5869  
Number of cycles run: 1838  
Number of cycles run: 33494  
Number of cycles run: 33599  
Number of cycles run: 16861  
Number of cycles run: 2370  
Number of cycles run: 15162  
Number of cycles run: 2297  
Number of cycles run: 4703  
Number of cycles run: 2389  
Number of cycles run: 441  
Number of cycles run: 50000  
Number of cycles run: 6861  
Number of cycles run: 2786  
Number of cycles run: 50000  
Number of cycles run: 3555  
Number of cycles run: 3129  
Number of cycles run: 50000  
Number of cycles run: 4059  
Number of cycles run: 3630  
Number of cycles run: 1932  
Number of cycles run: 4463  
Number of cycles run: 724  
Number of cycles run: 6038  
Number of cycles run: 50000  
Number of cycles run: 24127  
Number of cycles run: 1834  
Number of cycles run: 7686  
Number of cycles run: 683  
Number of cycles run: 3916  
Number of cycles run: 6371  
Number of cycles run: 17128  
Number of cycles run: 4023  
Number of cycles run: 7977  
Number of cycles run: 3050  
Number of cycles run: 2295  
Number of cycles run: 1309  
Number of cycles run: 1708  
Number of cycles run: 6842  
Number of cycles run: 4208  
Number of cycles run: 2538  
Number of cycles run: 4101  
Number of cycles run: 7369  
Number of cycles run: 50000  
Number of cycles run: 621  
Number of cycles run: 7392  
Number of cycles run: 2364  
Number of cycles run: 5188  
Number of cycles run: 740  
Number of cycles run: 50000  
Number of cycles run: 1763  
Number of cycles run: 1811  
Number of cycles run: 3754  
Number of cycles run: 1777  
Number of cycles run: 619  
Number of cycles run: 2929  
Number of cycles run: 4301  
Number of cycles run: 1709  
Number of cycles run: 3314  
Number of cycles run: 4726  
Number of cycles run: 4542  
Number of cycles run: 4412  
Number of cycles run: 10629  
Number of cycles run: 435  
Av cycles for attraction strength 0.6 is 9574  
standard diviation is 14675.73974167069  
Testing average cycles for attraction strength 0.6  
Number of cycles run: 2450  
Number of cycles run: 2188  
Number of cycles run: 3870  
Number of cycles run: 3559  
Number of cycles run: 24856  
Number of cycles run: 50000  
Number of cycles run: 845  
Number of cycles run: 1883  
Number of cycles run: 605  
Number of cycles run: 5197  
Number of cycles run: 50000  
Number of cycles run: 7871  
Number of cycles run: 16756  
Number of cycles run: 895  
Number of cycles run: 886  
Number of cycles run: 3650  
Number of cycles run: 618  
Number of cycles run: 8797  
Number of cycles run: 3093  
Number of cycles run: 1807  
Number of cycles run: 1699  
Number of cycles run: 2136  
Number of cycles run: 3918  
Number of cycles run: 2649  
Number of cycles run: 2585  
Number of cycles run: 1081  
Number of cycles run: 4066  
Number of cycles run: 371  
Number of cycles run: 4101  
Number of cycles run: 4407  
Number of cycles run: 1162  
Number of cycles run: 4390  
Number of cycles run: 663  
Number of cycles run: 2329  
Number of cycles run: 1345  
Number of cycles run: 453  
Number of cycles run: 395  
Number of cycles run: 5893  
Number of cycles run: 7776  
Number of cycles run: 758  
Number of cycles run: 1982  
Number of cycles run: 50000  
Number of cycles run: 3195  
Number of cycles run: 872  
Number of cycles run: 1782  
Number of cycles run: 579  
Number of cycles run: 32977  
Number of cycles run: 5724  
Number of cycles run: 3221  
Number of cycles run: 15523  
Number of cycles run: 26327  
Number of cycles run: 2560  
Number of cycles run: 24472  
Number of cycles run: 2764  
Number of cycles run: 50000  
Number of cycles run: 50000  
Number of cycles run: 6943  
Number of cycles run: 3883  
Number of cycles run: 2442  
Number of cycles run: 2644  
Number of cycles run: 50000  
Number of cycles run: 5226  
Number of cycles run: 2686  
Number of cycles run: 10714  
Number of cycles run: 723  
Number of cycles run: 4119  
Number of cycles run: 6523  
Number of cycles run: 3123  
Number of cycles run: 6205  
Number of cycles run: 17177  
Number of cycles run: 4796  
Number of cycles run: 2358  
Number of cycles run: 759  
Number of cycles run: 572  
Number of cycles run: 50000  
Number of cycles run: 941  
Number of cycles run: 1043  
Number of cycles run: 50000  
Number of cycles run: 50000  
Number of cycles run: 616  
Number of cycles run: 3623  
Number of cycles run: 9889  
Number of cycles run: 50000  
Number of cycles run: 1230  
Number of cycles run: 2808  
Number of cycles run: 958  
Number of cycles run: 740  
Number of cycles run: 4338  
Number of cycles run: 5963  
Number of cycles run: 1478  
Number of cycles run: 2297  
Number of cycles run: 725  
Number of cycles run: 1347  
Number of cycles run: 3320  
Number of cycles run: 8383  
Number of cycles run: 2328  
Number of cycles run: 3273  
Number of cycles run: 1025  
Number of cycles run: 2470  
Number of cycles run: 4389  
Av cycles for attraction strength 0.6 is 9080  
standard diviation is 14829.71149802812  
Testing average cycles for attraction strength 0.6  
Number of cycles run: 1635  
Number of cycles run: 8239  
Number of cycles run: 8793  
Number of cycles run: 8708  
Number of cycles run: 5458  
Number of cycles run: 769  
Number of cycles run: 7254  
Number of cycles run: 701  
Number of cycles run: 24834  
Number of cycles run: 692  
Number of cycles run: 6625  
Number of cycles run: 705  
Number of cycles run: 1102  
Number of cycles run: 2135  
Number of cycles run: 2220  
Number of cycles run: 3019  
Number of cycles run: 18976  
Number of cycles run: 44024  
Number of cycles run: 3963  
Number of cycles run: 25273  
Number of cycles run: 6504  
Number of cycles run: 50000  
Number of cycles run: 576  
Number of cycles run: 10196  
Number of cycles run: 50000  
Number of cycles run: 8227  
Number of cycles run: 2345  
Number of cycles run: 14060  
Number of cycles run: 706  
Number of cycles run: 861  
Number of cycles run: 1981  
Number of cycles run: 16297  
Number of cycles run: 9065  
Number of cycles run: 50000  
Number of cycles run: 2404  
Number of cycles run: 4468  
Number of cycles run: 3897  
Number of cycles run: 3840  
Number of cycles run: 4109  
Number of cycles run: 8265  
Number of cycles run: 8895  
Number of cycles run: 2287  
Number of cycles run: 7984  
Number of cycles run: 433  
Number of cycles run: 1169  
Number of cycles run: 4022  
Number of cycles run: 4130  
Number of cycles run: 4716  
Number of cycles run: 2490  
Number of cycles run: 4117  
Number of cycles run: 3127  
Number of cycles run: 1146  
Number of cycles run: 865  
Number of cycles run: 2505  
Number of cycles run: 5513  
Number of cycles run: 2570  
Number of cycles run: 2412  
Number of cycles run: 1653  
Number of cycles run: 3733  
Number of cycles run: 2441  
Number of cycles run: 9908  
Number of cycles run: 18389  
Number of cycles run: 1410  
Number of cycles run: 6774  
Number of cycles run: 12997  
Number of cycles run: 1542  
Number of cycles run: 607  
Number of cycles run: 9826  
Number of cycles run: 7772  
Number of cycles run: 12127  
Number of cycles run: 3645  
Number of cycles run: 1370  
Number of cycles run: 5399  
Number of cycles run: 2072  
Number of cycles run: 48055  
Number of cycles run: 2861  
Number of cycles run: 1112  
Number of cycles run: 1074  
Number of cycles run: 2803

Number of cycles run: 5421  
Number of cycles run: 6060  
Number of cycles run: 4761  
Number of cycles run: 11224  
Number of cycles run: 6633  
Number of cycles run: 9659  
Number of cycles run: 2815  
Number of cycles run: 10883  
Number of cycles run: 2390  
Number of cycles run: 9438  
Number of cycles run: 50000  
Number of cycles run: 7634  
Number of cycles run: 4625  
Number of cycles run: 20782  
Number of cycles run: 5864  
Number of cycles run: 6436  
Number of cycles run: 41828  
Number of cycles run: 50000  
Number of cycles run: 26224  
Number of cycles run: 18756  
Number of cycles run: 699  
Av cycles for attraction strength 0.6 is 9410  
standard diviation is 12750.786837353065  
Testing average cycles for attraction strength 0.6  
Number of cycles run: 648  
Number of cycles run: 3727  
Number of cycles run: 9928  
Number of cycles run: 5610  
Number of cycles run: 1182  
Number of cycles run: 10129  
Number of cycles run: 3337  
Number of cycles run: 3515  
Number of cycles run: 3669  
Number of cycles run: 6190  
Number of cycles run: 2031  
Number of cycles run: 50000  
Number of cycles run: 2491  
Number of cycles run: 2573  
Number of cycles run: 21375  
Number of cycles run: 6318  
Number of cycles run: 7096  
Number of cycles run: 714  
Number of cycles run: 2037  
Number of cycles run: 18608  
Number of cycles run: 4355  
Number of cycles run: 7200  
Number of cycles run: 2103  
Number of cycles run: 1151  
Number of cycles run: 2419  
Number of cycles run: 14395  
Number of cycles run: 760  
Number of cycles run: 887  
Number of cycles run: 1918  
Number of cycles run: 50000  
Number of cycles run: 17403  
Number of cycles run: 13166  
Number of cycles run: 4653  
Number of cycles run: 1462  
Number of cycles run: 32173  
Number of cycles run: 50000  
Number of cycles run: 2829  
Number of cycles run: 2237  
Number of cycles run: 5003  
Number of cycles run: 50000  
Number of cycles run: 17651  
Number of cycles run: 2499  
Number of cycles run: 2845  
Number of cycles run: 513  
Number of cycles run: 2447  
Number of cycles run: 6004  
Number of cycles run: 2416  
Number of cycles run: 427  
Number of cycles run: 879  
Number of cycles run: 3705  
Number of cycles run: 501  
Number of cycles run: 6738  
Number of cycles run: 13447  
Number of cycles run: 2817  
Number of cycles run: 1855  
Number of cycles run: 3167  
Number of cycles run: 4048  
Number of cycles run: 456  
Number of cycles run: 9617  
Number of cycles run: 3634  
Number of cycles run: 927  
Number of cycles run: 960  
Number of cycles run: 5555  
Number of cycles run: 27987  
Number of cycles run: 50000  
Number of cycles run: 1297  
Number of cycles run: 1518  
Number of cycles run: 2250  
Number of cycles run: 3375  
Number of cycles run: 467  
Number of cycles run: 10660  
Number of cycles run: 50000  
Number of cycles run: 2115  
Number of cycles run: 1488  
Number of cycles run: 4942  
Number of cycles run: 4699  
Number of cycles run: 7899  
Number of cycles run: 50000  
Number of cycles run: 2421  
Number of cycles run: 2680  
Number of cycles run: 3005  
Number of cycles run: 1400  
Number of cycles run: 1635  
Number of cycles run: 2064  
Number of cycles run: 2463  
Number of cycles run: 3458  
Number of cycles run: 2237  
Number of cycles run: 4986  
Number of cycles run: 3294  
Number of cycles run: 5639  
Number of cycles run: 3864  
Number of cycles run: 12411  
Number of cycles run: 2099  
Number of cycles run: 50000  
Number of cycles run: 13474  
Number of cycles run: 1364  
Number of cycles run: 50000  
Number of cycles run: 21230  
Number of cycles run: 2590  
Number of cycles run: 50000  
Av cycles for attraction strength 0.6 is 9794  
standard diviation is 14659.210764577438  
Testing average cycles for attraction strength 0.6  
Number of cycles run: 1775  
Number of cycles run: 5190  
Number of cycles run: 11904  
Number of cycles run: 2674  
Number of cycles run: 2791  
Number of cycles run: 3397  
Number of cycles run: 2952  
Number of cycles run: 24078  
Number of cycles run: 1656  
Number of cycles run: 9099  
Number of cycles run: 17727  
Number of cycles run: 50000  
Number of cycles run: 1611  
Number of cycles run: 7633  
Number of cycles run: 5716  
Number of cycles run: 727  
Number of cycles run: 3159  
Number of cycles run: 12311  
Number of cycles run: 4848  
Number of cycles run: 14482  
Number of cycles run: 662  
Number of cycles run: 1690  
Number of cycles run: 16732  
Number of cycles run: 4051  
Number of cycles run: 649  
Number of cycles run: 38181  
Number of cycles run: 50000  
Number of cycles run: 1674  
Number of cycles run: 4369  
Number of cycles run: 6984  
Number of cycles run: 3966