

LoopSheet A**SpiroChart Collection 1.6**

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This spreadsheet calculates the polar equation $r = r_o + r_1 * \sin(q * \theta - \text{rotate})$.

CHANGE THESE TO ANY VALUE**(POSITIVE, NEGATIVE, DECIMAL)**

6=q. Controls number of loops in completed pattern.

0=r_o. Controls how far loops pass through or miss the center.

2=r₁. Controls fluctuation in distance from center.

0=Number of degrees figure is rotated or cycled.

18<--Increasing this number will add loops to an incomplete spiral or make figure appear jagged.

Decreasing this number will make chart appear less jagged.

Theta (degrees)	r (radius)	x (coord)	y (coord)
0.00	0.0000	0.0000	0.0000
18.00	1.9021	1.8090	0.5878
36.00	-1.1756	-0.9511	-0.6910
54.00	-1.1756	-0.6910	-0.9511
72.00	1.9021	0.5878	1.8090
90.00	0.0000	0.0000	0.0000
108.00	-1.9021	0.5878	-1.8090
126.00	1.1756	-0.6910	0.9511
144.00	1.1756	-0.9511	0.6910
162.00	-1.9021	1.8090	-0.5878
180.00	0.0000	0.0000	0.0000
198.00	1.9021	-1.8090	-0.5878
216.00	-1.1756	0.9511	0.6910
234.00	-1.1756	0.6910	0.9511
252.00	1.9021	-0.5878	-1.8090
270.00	0.0000	0.0000	0.0000
288.00	-1.9021	-0.5878	1.8090
306.00	1.1756	0.6910	-0.9511
324.00	1.1756	0.9511	-0.6910
342.00	-1.9021	-1.8090	0.5878
360.00	0.0000	0.0000	0.0000
378.00	1.9021	1.8090	0.5878

396.00	-1.1756	-0.9511	-0.6910
414.00	-1.1756	-0.6910	-0.9511
432.00	1.9021	0.5878	1.8090
450.00	0.0000	0.0000	0.0000
468.00	-1.9021	0.5878	-1.8090
486.00	1.1756	-0.6910	0.9511
504.00	1.1756	-0.9511	0.6910
522.00	-1.9021	1.8090	-0.5878
540.00	0.0000	0.0000	0.0000
558.00	1.9021	-1.8090	-0.5878
576.00	-1.1756	0.9511	0.6910
594.00	-1.1756	0.6910	0.9511
612.00	1.9021	-0.5878	-1.8090
630.00	0.0000	0.0000	0.0000
648.00	-1.9021	-0.5878	1.8090
666.00	1.1756	0.6910	-0.9511
684.00	1.1756	0.9511	-0.6910
702.00	-1.9021	-1.8090	0.5878
720.00	0.0000	0.0000	0.0000
738.00	1.9021	1.8090	0.5878
756.00	-1.1756	-0.9511	-0.6910
774.00	-1.1756	-0.6910	-0.9511
792.00	1.9021	0.5878	1.8090
810.00	0.0000	0.0000	0.0000
828.00	-1.9021	0.5878	-1.8090
846.00	1.1756	-0.6910	0.9511
864.00	1.1756	-0.9511	0.6910
882.00	-1.9021	1.8090	-0.5878
900.00	0.0000	0.0000	0.0000
918.00	1.9021	-1.8090	-0.5878
936.00	-1.1756	0.9511	0.6910
954.00	-1.1756	0.6910	0.9511
972.00	1.9021	-0.5878	-1.8090
990.00	0.0000	0.0000	0.0000
1008.00	-1.9021	-0.5878	1.8090
1026.00	1.1756	0.6910	-0.9511
1044.00	1.1756	0.9511	-0.6910
1062.00	-1.9021	-1.8090	0.5878
1080.00	0.0000	0.0000	0.0000
1098.00	1.9021	1.8090	0.5878
1116.00	-1.1756	-0.9511	-0.6910
1134.00	-1.1756	-0.6910	-0.9511
1152.00	1.9021	0.5878	1.8090
1170.00	0.0000	0.0000	0.0000

1188.00	-1.9021	0.5878	-1.8090
1206.00	1.1756	-0.6910	0.9511
1224.00	1.1756	-0.9511	0.6910
1242.00	-1.9021	1.8090	-0.5878
1260.00	0.0000	0.0000	0.0000
1278.00	1.9021	-1.8090	-0.5878
1296.00	-1.1756	0.9511	0.6910
1314.00	-1.1756	0.6910	0.9511
1332.00	1.9021	-0.5878	-1.8090
1350.00	0.0000	0.0000	0.0000
1368.00	-1.9021	-0.5878	1.8090
1386.00	1.1756	0.6910	-0.9511
1404.00	1.1756	0.9511	-0.6910
1422.00	-1.9021	-1.8090	0.5878
1440.00	0.0000	0.0000	0.0000
1458.00	1.9021	1.8090	0.5878
1476.00	-1.1756	-0.9511	-0.6910
1494.00	-1.1756	-0.6910	-0.9511
1512.00	1.9021	0.5878	1.8090
1530.00	0.0000	0.0000	0.0000
1548.00	-1.9021	0.5878	-1.8090
1566.00	1.1756	-0.6910	0.9511
1584.00	1.1756	-0.9511	0.6910
1602.00	-1.9021	1.8090	-0.5878
1620.00	0.0000	0.0000	0.0000
1638.00	1.9021	-1.8090	-0.5878
1656.00	-1.1756	0.9511	0.6910
1674.00	-1.1756	0.6910	0.9511
1692.00	1.9021	-0.5878	-1.8090
1710.00	0.0000	0.0000	0.0000
1728.00	-1.9021	-0.5878	1.8090
1746.00	1.1756	0.6910	-0.9511
1764.00	1.1756	0.9511	-0.6910
1782.00	-1.9021	-1.8090	0.5878
1800.00	0.0000	0.0000	0.0000
1818.00	1.9021	1.8090	0.5878
1836.00	-1.1756	-0.9511	-0.6910
1854.00	-1.1756	-0.6910	-0.9511
1872.00	1.9021	0.5878	1.8090
1890.00	0.0000	0.0000	0.0000
1908.00	-1.9021	0.5878	-1.8090
1926.00	1.1756	-0.6910	0.9511
1944.00	1.1756	-0.9511	0.6910
1962.00	-1.9021	1.8090	-0.5878

1980.00	0.0000	0.0000	0.0000
1998.00	1.9021	-1.8090	-0.5878
2016.00	-1.1756	0.9511	0.6910
2034.00	-1.1756	0.6910	0.9511
2052.00	1.9021	-0.5878	-1.8090
2070.00	0.0000	0.0000	0.0000
2088.00	-1.9021	-0.5878	1.8090
2106.00	1.1756	0.6910	-0.9511
2124.00	1.1756	0.9511	-0.6910
2142.00	-1.9021	-1.8090	0.5878
2160.00	0.0000	0.0000	0.0000
2178.00	1.9021	1.8090	0.5878
2196.00	-1.1756	-0.9511	-0.6910
2214.00	-1.1756	-0.6910	-0.9511
2232.00	1.9021	0.5878	1.8090
2250.00	0.0000	0.0000	0.0000
2268.00	-1.9021	0.5878	-1.8090
2286.00	1.1756	-0.6910	0.9511
2304.00	1.1756	-0.9511	0.6910
2322.00	-1.9021	1.8090	-0.5878
2340.00	0.0000	0.0000	0.0000
2358.00	1.9021	-1.8090	-0.5878
2376.00	-1.1756	0.9511	0.6910
2394.00	-1.1756	0.6910	0.9511
2412.00	1.9021	-0.5878	-1.8090
2430.00	0.0000	0.0000	0.0000
2448.00	-1.9021	-0.5878	1.8090
2466.00	1.1756	0.6910	-0.9511
2484.00	1.1756	0.9511	-0.6910
2502.00	-1.9021	-1.8090	0.5878
2520.00	0.0000	0.0000	0.0000
2538.00	1.9021	1.8090	0.5878
2556.00	-1.1756	-0.9511	-0.6910
2574.00	-1.1756	-0.6910	-0.9511
2592.00	1.9021	0.5878	1.8090
2610.00	0.0000	0.0000	0.0000
2628.00	-1.9021	0.5878	-1.8090
2646.00	1.1756	-0.6910	0.9511
2664.00	1.1756	-0.9511	0.6910
2682.00	-1.9021	1.8090	-0.5878
2700.00	0.0000	0.0000	0.0000
2718.00	1.9021	-1.8090	-0.5878
2736.00	-1.1756	0.9511	0.6910
2754.00	-1.1756	0.6910	0.9511

2772.00	1.9021	-0.5878	-1.8090
2790.00	0.0000	0.0000	0.0000
2808.00	-1.9021	-0.5878	1.8090
2826.00	1.1756	0.6910	-0.9511
2844.00	1.1756	0.9511	-0.6910
2862.00	-1.9021	-1.8090	0.5878
2880.00	0.0000	0.0000	0.0000
2898.00	1.9021	1.8090	0.5878
2916.00	-1.1756	-0.9511	-0.6910
2934.00	-1.1756	-0.6910	-0.9511
2952.00	1.9021	0.5878	1.8090
2970.00	0.0000	0.0000	0.0000
2988.00	-1.9021	0.5878	-1.8090
3006.00	1.1756	-0.6910	0.9511
3024.00	1.1756	-0.9511	0.6910
3042.00	-1.9021	1.8090	-0.5878
3060.00	0.0000	0.0000	0.0000
3078.00	1.9021	-1.8090	-0.5878
3096.00	-1.1756	0.9511	0.6910
3114.00	-1.1756	0.6910	0.9511
3132.00	1.9021	-0.5878	-1.8090
3150.00	0.0000	0.0000	0.0000
3168.00	-1.9021	-0.5878	1.8090
3186.00	1.1756	0.6910	-0.9511
3204.00	1.1756	0.9511	-0.6910
3222.00	-1.9021	-1.8090	0.5878
3240.00	0.0000	0.0000	0.0000
3258.00	1.9021	1.8090	0.5878
3276.00	-1.1756	-0.9511	-0.6910
3294.00	-1.1756	-0.6910	-0.9511
3312.00	1.9021	0.5878	1.8090
3330.00	0.0000	0.0000	0.0000
3348.00	-1.9021	0.5878	-1.8090
3366.00	1.1756	-0.6910	0.9511
3384.00	1.1756	-0.9511	0.6910
3402.00	-1.9021	1.8090	-0.5878
3420.00	0.0000	0.0000	0.0000
3438.00	1.9021	-1.8090	-0.5878
3456.00	-1.1756	0.9511	0.6910
3474.00	-1.1756	0.6910	0.9511
3492.00	1.9021	-0.5878	-1.8090
3510.00	0.0000	0.0000	0.0000
3528.00	-1.9021	-0.5878	1.8090
3546.00	1.1756	0.6910	-0.9511

3564.00	1.1756	0.9511	-0.6910
3582.00	-1.9021	-1.8090	0.5878
3600.00	0.0000	0.0000	0.0000
3618.00	1.9021	1.8090	0.5878
3636.00	-1.1756	-0.9511	-0.6910
3654.00	-1.1756	-0.6910	-0.9511
3672.00	1.9021	0.5878	1.8090
3690.00	0.0000	0.0000	0.0000
3708.00	-1.9021	0.5878	-1.8090
3726.00	1.1756	-0.6910	0.9511
3744.00	1.1756	-0.9511	0.6910
3762.00	-1.9021	1.8090	-0.5878
3780.00	0.0000	0.0000	0.0000
3798.00	1.9021	-1.8090	-0.5878
3816.00	-1.1756	0.9511	0.6910
3834.00	-1.1756	0.6910	0.9511
3852.00	1.9021	-0.5878	-1.8090
3870.00	0.0000	0.0000	0.0000
3888.00	-1.9021	-0.5878	1.8090
3906.00	1.1756	0.6910	-0.9511
3924.00	1.1756	0.9511	-0.6910
3942.00	-1.9021	-1.8090	0.5878
3960.00	0.0000	0.0000	0.0000
3978.00	1.9021	1.8090	0.5878
3996.00	-1.1756	-0.9511	-0.6910
4014.00	-1.1756	-0.6910	-0.9511
4032.00	1.9021	0.5878	1.8090
4050.00	0.0000	0.0000	0.0000
4068.00	-1.9021	0.5878	-1.8090
4086.00	1.1756	-0.6910	0.9511
4104.00	1.1756	-0.9511	0.6910
4122.00	-1.9021	1.8090	-0.5878
4140.00	0.0000	0.0000	0.0000
4158.00	1.9021	-1.8090	-0.5878
4176.00	-1.1756	0.9511	0.6910
4194.00	-1.1756	0.6910	0.9511
4212.00	1.9021	-0.5878	-1.8090
4230.00	0.0000	0.0000	0.0000
4248.00	-1.9021	-0.5878	1.8090
4266.00	1.1756	0.6910	-0.9511
4284.00	1.1756	0.9511	-0.6910
4302.00	-1.9021	-1.8090	0.5878
4320.00	0.0000	0.0000	0.0000
4338.00	1.9021	1.8090	0.5878

4356.00	-1.1756	-0.9511	-0.6910
4374.00	-1.1756	-0.6910	-0.9511
4392.00	1.9021	0.5878	1.8090
4410.00	0.0000	0.0000	0.0000
4428.00	-1.9021	0.5878	-1.8090
4446.00	1.1756	-0.6910	0.9511
4464.00	1.1756	-0.9511	0.6910
4482.00	-1.9021	1.8090	-0.5878
4500.00	0.0000	0.0000	0.0000
4518.00	1.9021	-1.8090	-0.5878
4536.00	-1.1756	0.9511	0.6910
4554.00	-1.1756	0.6910	0.9511
4572.00	1.9021	-0.5878	-1.8090
4590.00	0.0000	0.0000	0.0000
4608.00	-1.9021	-0.5878	1.8090
4626.00	1.1756	0.6910	-0.9511
4644.00	1.1756	0.9511	-0.6910
4662.00	-1.9021	-1.8090	0.5878
4680.00	0.0000	0.0000	0.0000
4698.00	1.9021	1.8090	0.5878
4716.00	-1.1756	-0.9511	-0.6910
4734.00	-1.1756	-0.6910	-0.9511
4752.00	1.9021	0.5878	1.8090
4770.00	0.0000	0.0000	0.0000
4788.00	-1.9021	0.5878	-1.8090
4806.00	1.1756	-0.6910	0.9511
4824.00	1.1756	-0.9511	0.6910
4842.00	-1.9021	1.8090	-0.5878
4860.00	0.0000	0.0000	0.0000
4878.00	1.9021	-1.8090	-0.5878
4896.00	-1.1756	0.9511	0.6910
4914.00	-1.1756	0.6910	0.9511
4932.00	1.9021	-0.5878	-1.8090
4950.00	0.0000	0.0000	0.0000
4968.00	-1.9021	-0.5878	1.8090
4986.00	1.1756	0.6910	-0.9511
5004.00	1.1756	0.9511	-0.6910
5022.00	-1.9021	-1.8090	0.5878
5040.00	0.0000	0.0000	0.0000
5058.00	1.9021	1.8090	0.5878
5076.00	-1.1756	-0.9511	-0.6910
5094.00	-1.1756	-0.6910	-0.9511
5112.00	1.9021	0.5878	1.8090
5130.00	0.0000	0.0000	0.0000

5148.00	-1.9021	0.5878	-1.8090
5166.00	1.1756	-0.6910	0.9511
5184.00	1.1756	-0.9511	0.6910
5202.00	-1.9021	1.8090	-0.5878
5220.00	0.0000	0.0000	0.0000
5238.00	1.9021	-1.8090	-0.5878
5256.00	-1.1756	0.9511	0.6910
5274.00	-1.1756	0.6910	0.9511
5292.00	1.9021	-0.5878	-1.8090
5310.00	0.0000	0.0000	0.0000
5328.00	-1.9021	-0.5878	1.8090
5346.00	1.1756	0.6910	-0.9511
5364.00	1.1756	0.9511	-0.6910
5382.00	-1.9021	-1.8090	0.5878
5400.00	0.0000	0.0000	0.0000
5418.00	1.9021	1.8090	0.5878
5436.00	-1.1756	-0.9511	-0.6910
5454.00	-1.1756	-0.6910	-0.9511
5472.00	1.9021	0.5878	1.8090
5490.00	0.0000	0.0000	0.0000
5508.00	-1.9021	0.5878	-1.8090
5526.00	1.1756	-0.6910	0.9511
5544.00	1.1756	-0.9511	0.6910
5562.00	-1.9021	1.8090	-0.5878
5580.00	0.0000	0.0000	0.0000
5598.00	1.9021	-1.8090	-0.5878
5616.00	-1.1756	0.9511	0.6910
5634.00	-1.1756	0.6910	0.9511
5652.00	1.9021	-0.5878	-1.8090
5670.00	0.0000	0.0000	0.0000
5688.00	-1.9021	-0.5878	1.8090
5706.00	1.1756	0.6910	-0.9511
5724.00	1.1756	0.9511	-0.6910
5742.00	-1.9021	-1.8090	0.5878
5760.00	0.0000	0.0000	0.0000
5778.00	1.9021	1.8090	0.5878
5796.00	-1.1756	-0.9511	-0.6910
5814.00	-1.1756	-0.6910	-0.9511
5832.00	1.9021	0.5878	1.8090
5850.00	0.0000	0.0000	0.0000
5868.00	-1.9021	0.5878	-1.8090
5886.00	1.1756	-0.6910	0.9511
5904.00	1.1756	-0.9511	0.6910
5922.00	-1.9021	1.8090	-0.5878

5940.00	0.0000	0.0000	0.0000
5958.00	1.9021	-1.8090	-0.5878
5976.00	-1.1756	0.9511	0.6910
5994.00	-1.1756	0.6910	0.9511
6012.00	1.9021	-0.5878	-1.8090
6030.00	0.0000	0.0000	0.0000
6048.00	-1.9021	-0.5878	1.8090
6066.00	1.1756	0.6910	-0.9511
6084.00	1.1756	0.9511	-0.6910
6102.00	-1.9021	-1.8090	0.5878
6120.00	0.0000	0.0000	0.0000
6138.00	1.9021	1.8090	0.5878
6156.00	-1.1756	-0.9511	-0.6910
6174.00	-1.1756	-0.6910	-0.9511
6192.00	1.9021	0.5878	1.8090
6210.00	0.0000	0.0000	0.0000
6228.00	-1.9021	0.5878	-1.8090
6246.00	1.1756	-0.6910	0.9511
6264.00	1.1756	-0.9511	0.6910
6282.00	-1.9021	1.8090	-0.5878
6300.00	0.0000	0.0000	0.0000
6318.00	1.9021	-1.8090	-0.5878
6336.00	-1.1756	0.9511	0.6910
6354.00	-1.1756	0.6910	0.9511
6372.00	1.9021	-0.5878	-1.8090
6390.00	0.0000	0.0000	0.0000
6408.00	-1.9021	-0.5878	1.8090
6426.00	1.1756	0.6910	-0.9511
6444.00	1.1756	0.9511	-0.6910
6462.00	-1.9021	-1.8090	0.5878
6480.00	0.0000	0.0000	0.0000
6498.00	1.9021	1.8090	0.5878
6516.00	-1.1756	-0.9511	-0.6910
6534.00	-1.1756	-0.6910	-0.9511
6552.00	1.9021	0.5878	1.8090
6570.00	0.0000	0.0000	0.0000
6588.00	-1.9021	0.5878	-1.8090
6606.00	1.1756	-0.6910	0.9511
6624.00	1.1756	-0.9511	0.6910
6642.00	-1.9021	1.8090	-0.5878
6660.00	0.0000	0.0000	0.0000
6678.00	1.9021	-1.8090	-0.5878
6696.00	-1.1756	0.9511	0.6910
6714.00	-1.1756	0.6910	0.9511

6732.00	1.9021	-0.5878	-1.8090
6750.00	0.0000	0.0000	0.0000
6768.00	-1.9021	-0.5878	1.8090
6786.00	1.1756	0.6910	-0.9511
6804.00	1.1756	0.9511	-0.6910
6822.00	-1.9021	-1.8090	0.5878
6840.00	0.0000	0.0000	0.0000
6858.00	1.9021	1.8090	0.5878
6876.00	-1.1756	-0.9511	-0.6910
6894.00	-1.1756	-0.6910	-0.9511
6912.00	1.9021	0.5878	1.8090
6930.00	0.0000	0.0000	0.0000
6948.00	-1.9021	0.5878	-1.8090
6966.00	1.1756	-0.6910	0.9511
6984.00	1.1756	-0.9511	0.6910
7002.00	-1.9021	1.8090	-0.5878
7020.00	0.0000	0.0000	0.0000
7038.00	1.9021	-1.8090	-0.5878
7056.00	-1.1756	0.9511	0.6910
7074.00	-1.1756	0.6910	0.9511
7092.00	1.9021	-0.5878	-1.8090
7110.00	0.0000	0.0000	0.0000
7128.00	-1.9021	-0.5878	1.8090
7146.00	1.1756	0.6910	-0.9511
7164.00	1.1756	0.9511	-0.6910
7182.00	-1.9021	-1.8090	0.5878
7200.00	0.0000	0.0000	0.0000
7218.00	1.9021	1.8090	0.5878
7236.00	-1.1756	-0.9511	-0.6910
7254.00	-1.1756	-0.6910	-0.9511
7272.00	1.9021	0.5878	1.8090
7290.00	0.0000	0.0000	0.0000
7308.00	-1.9021	0.5878	-1.8090
7326.00	1.1756	-0.6910	0.9511
7344.00	1.1756	-0.9511	0.6910
7362.00	-1.9021	1.8090	-0.5878
7380.00	0.0000	0.0000	0.0000
7398.00	1.9021	-1.8090	-0.5878
7416.00	-1.1756	0.9511	0.6910
7434.00	-1.1756	0.6910	0.9511
7452.00	1.9021	-0.5878	-1.8090
7470.00	0.0000	0.0000	0.0000
7488.00	-1.9021	-0.5878	1.8090
7506.00	1.1756	0.6910	-0.9511

7524.00	1.1756	0.9511	-0.6910
7542.00	-1.9021	-1.8090	0.5878
7560.00	0.0000	0.0000	0.0000
7578.00	1.9021	1.8090	0.5878
7596.00	-1.1756	-0.9511	-0.6910
7614.00	-1.1756	-0.6910	-0.9511
7632.00	1.9021	0.5878	1.8090
7650.00	0.0000	0.0000	0.0000
7668.00	-1.9021	0.5878	-1.8090
7686.00	1.1756	-0.6910	0.9511
7704.00	1.1756	-0.9511	0.6910
7722.00	-1.9021	1.8090	-0.5878
7740.00	0.0000	0.0000	0.0000
7758.00	1.9021	-1.8090	-0.5878
7776.00	-1.1756	0.9511	0.6910
7794.00	-1.1756	0.6910	0.9511
7812.00	1.9021	-0.5878	-1.8090
7830.00	0.0000	0.0000	0.0000
7848.00	-1.9021	-0.5878	1.8090
7866.00	1.1756	0.6910	-0.9511
7884.00	1.1756	0.9511	-0.6910
7902.00	-1.9021	-1.8090	0.5878
7920.00	0.0000	0.0000	0.0000
7938.00	1.9021	1.8090	0.5878
7956.00	-1.1756	-0.9511	-0.6910
7974.00	-1.1756	-0.6910	-0.9511
7992.00	1.9021	0.5878	1.8090
8010.00	0.0000	0.0000	0.0000
8028.00	-1.9021	0.5878	-1.8090
8046.00	1.1756	-0.6910	0.9511
8064.00	1.1756	-0.9511	0.6910
8082.00	-1.9021	1.8090	-0.5878
8100.00	0.0000	0.0000	0.0000
8118.00	1.9021	-1.8090	-0.5878
8136.00	-1.1756	0.9511	0.6910
8154.00	-1.1756	0.6910	0.9511
8172.00	1.9021	-0.5878	-1.8090
8190.00	0.0000	0.0000	0.0000
8208.00	-1.9021	-0.5878	1.8090
8226.00	1.1756	0.6910	-0.9511
8244.00	1.1756	0.9511	-0.6910
8262.00	-1.9021	-1.8090	0.5878
8280.00	0.0000	0.0000	0.0000
8298.00	1.9021	1.8090	0.5878

8316.00	-1.1756	-0.9511	-0.6910
8334.00	-1.1756	-0.6910	-0.9511
8352.00	1.9021	0.5878	1.8090
8370.00	0.0000	0.0000	0.0000
8388.00	-1.9021	0.5878	-1.8090
8406.00	1.1756	-0.6910	0.9511
8424.00	1.1756	-0.9511	0.6910
8442.00	-1.9021	1.8090	-0.5878
8460.00	0.0000	0.0000	0.0000
8478.00	1.9021	-1.8090	-0.5878
8496.00	-1.1756	0.9511	0.6910
8514.00	-1.1756	0.6910	0.9511
8532.00	1.9021	-0.5878	-1.8090
8550.00	0.0000	0.0000	0.0000
8568.00	-1.9021	-0.5878	1.8090
8586.00	1.1756	0.6910	-0.9511
8604.00	1.1756	0.9511	-0.6910
8622.00	-1.9021	-1.8090	0.5878
8640.00	0.0000	0.0000	0.0000
8658.00	1.9021	1.8090	0.5878
8676.00	-1.1756	-0.9511	-0.6910
8694.00	-1.1756	-0.6910	-0.9511
8712.00	1.9021	0.5878	1.8090
8730.00	0.0000	0.0000	0.0000
8748.00	-1.9021	0.5878	-1.8090
8766.00	1.1756	-0.6910	0.9511
8784.00	1.1756	-0.9511	0.6910
8802.00	-1.9021	1.8090	-0.5878
8820.00	0.0000	0.0000	0.0000
8838.00	1.9021	-1.8090	-0.5878
8856.00	-1.1756	0.9511	0.6910
8874.00	-1.1756	0.6910	0.9511
8892.00	1.9021	-0.5878	-1.8090
8910.00	0.0000	0.0000	0.0000
8928.00	-1.9021	-0.5878	1.8090
8946.00	1.1756	0.6910	-0.9511
8964.00	1.1756	0.9511	-0.6910
8982.00	-1.9021	-1.8090	0.5878
9000.00	0.0000	0.0000	0.0000
9018.00	1.9021	1.8090	0.5878
9036.00	-1.1756	-0.9511	-0.6910
9054.00	-1.1756	-0.6910	-0.9511
9072.00	1.9021	0.5878	1.8090
9090.00	0.0000	0.0000	0.0000

9108.00	-1.9021	0.5878	-1.8090
9126.00	1.1756	-0.6910	0.9511
9144.00	1.1756	-0.9511	0.6910
9162.00	-1.9021	1.8090	-0.5878
9180.00	0.0000	0.0000	0.0000
9198.00	1.9021	-1.8090	-0.5878
9216.00	-1.1756	0.9511	0.6910
9234.00	-1.1756	0.6910	0.9511
9252.00	1.9021	-0.5878	-1.8090
9270.00	0.0000	0.0000	0.0000
9288.00	-1.9021	-0.5878	1.8090
9306.00	1.1756	0.6910	-0.9511
9324.00	1.1756	0.9511	-0.6910
9342.00	-1.9021	-1.8090	0.5878
9360.00	0.0000	0.0000	0.0000
9378.00	1.9021	1.8090	0.5878
9396.00	-1.1756	-0.9511	-0.6910
9414.00	-1.1756	-0.6910	-0.9511
9432.00	1.9021	0.5878	1.8090
9450.00	0.0000	0.0000	0.0000
9468.00	-1.9021	0.5878	-1.8090
9486.00	1.1756	-0.6910	0.9511
9504.00	1.1756	-0.9511	0.6910
9522.00	-1.9021	1.8090	-0.5878
9540.00	0.0000	0.0000	0.0000
9558.00	1.9021	-1.8090	-0.5878
9576.00	-1.1756	0.9511	0.6910
9594.00	-1.1756	0.6910	0.9511
9612.00	1.9021	-0.5878	-1.8090
9630.00	0.0000	0.0000	0.0000
9648.00	-1.9021	-0.5878	1.8090
9666.00	1.1756	0.6910	-0.9511
9684.00	1.1756	0.9511	-0.6910
9702.00	-1.9021	-1.8090	0.5878
9720.00	0.0000	0.0000	0.0000
9738.00	1.9021	1.8090	0.5878
9756.00	-1.1756	-0.9511	-0.6910
9774.00	-1.1756	-0.6910	-0.9511
9792.00	1.9021	0.5878	1.8090
9810.00	0.0000	0.0000	0.0000
9828.00	-1.9021	0.5878	-1.8090
9846.00	1.1756	-0.6910	0.9511
9864.00	1.1756	-0.9511	0.6910
9882.00	-1.9021	1.8090	-0.5878

9900.00	0.0000	0.0000	0.0000
9918.00	1.9021	-1.8090	-0.5878
9936.00	-1.1756	0.9511	0.6910
9954.00	-1.1756	0.6910	0.9511
9972.00	1.9021	-0.5878	-1.8090
9990.00	0.0000	0.0000	0.0000
###	-1.9021	-0.5878	1.8090
###	1.1756	0.6910	-0.9511
###	1.1756	0.9511	-0.6910
###	-1.9021	-1.8090	0.5878
###	0.0000	0.0000	0.0000
###	1.9021	1.8090	0.5878
###	-1.1756	-0.9511	-0.6910
###	-1.1756	-0.6910	-0.9511
###	1.9021	0.5878	1.8090
###	0.0000	0.0000	0.0000
###	-1.9021	0.5878	-1.8090
###	1.1756	-0.6910	0.9511
###	1.1756	-0.9511	0.6910
###	-1.9021	1.8090	-0.5878
###	0.0000	0.0000	0.0000
###	1.9021	-1.8090	-0.5878
###	-1.1756	0.9511	0.6910
###	-1.1756	0.6910	0.9511
###	1.9021	-0.5878	-1.8090
###	0.0000	0.0000	0.0000
###	-1.9021	-0.5878	1.8090
###	1.1756	0.6910	-0.9511
###	1.1756	0.9511	-0.6910
###	-1.9021	-1.8090	0.5878
###	0.0000	0.0000	0.0000
###	1.9021	1.8090	0.5878
###	-1.1756	-0.9511	-0.6910
###	-1.1756	-0.6910	-0.9511
###	1.9021	0.5878	1.8090
###	0.0000	0.0000	0.0000
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###	1.1756	-0.6910	0.9511
###	1.1756	-0.9511	0.6910
###	-1.9021	1.8090	-0.5878
###	0.0000	0.0000	0.0000
###	1.9021	-1.8090	-0.5878
###	-1.1756	0.9511	0.6910
###	-1.1756	0.6910	0.9511

###	1.9021	-0.5878	-1.8090
###	0.0000	0.0000	0.0000
###	-1.9021	-0.5878	1.8090
###	1.1756	0.6910	-0.9511
###	1.1756	0.9511	-0.6910
###	-1.9021	-1.8090	0.5878
###	0.0000	0.0000	0.0000
###	1.9021	1.8090	0.5878
###	-1.1756	-0.9511	-0.6910
###	-1.1756	-0.6910	-0.9511
###	1.9021	0.5878	1.8090
###	0.0000	0.0000	0.0000
###	-1.9021	0.5878	-1.8090
###	1.1756	-0.6910	0.9511
###	1.1756	-0.9511	0.6910
###	-1.9021	1.8090	-0.5878
###	0.0000	0.0000	0.0000
###	1.9021	-1.8090	-0.5878
###	-1.1756	0.9511	0.6910
###	-1.1756	0.6910	0.9511
###	1.9021	-0.5878	-1.8090
###	0.0000	0.0000	0.0000
###	-1.9021	-0.5878	1.8090
###	1.1756	0.6910	-0.9511
###	1.1756	0.9511	-0.6910
###	-1.9021	-1.8090	0.5878
###	0.0000	0.0000	0.0000
###	1.9021	1.8090	0.5878
###	-1.1756	-0.9511	-0.6910
###	-1.1756	-0.6910	-0.9511
###	1.9021	0.5878	1.8090
###	0.0000	0.0000	0.0000
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###	1.1756	-0.6910	0.9511
###	1.1756	-0.9511	0.6910
###	-1.9021	1.8090	-0.5878
###	0.0000	0.0000	0.0000
###	1.9021	-1.8090	-0.5878
###	-1.1756	0.9511	0.6910
###	-1.1756	0.6910	0.9511
###	1.9021	-0.5878	-1.8090
###	0.0000	0.0000	0.0000
###	-1.9021	-0.5878	1.8090
###	1.1756	0.6910	-0.9511

###	1.1756	0.9511	-0.6910
###	-1.9021	-1.8090	0.5878
###	0.0000	0.0000	0.0000
###	1.9021	1.8090	0.5878
###	-1.1756	-0.9511	-0.6910
###	-1.1756	-0.6910	-0.9511
###	1.9021	0.5878	1.8090
###	0.0000	0.0000	0.0000
###	-1.9021	0.5878	-1.8090
###	1.1756	-0.6910	0.9511
###	1.1756	-0.9511	0.6910
###	-1.9021	1.8090	-0.5878
###	0.0000	0.0000	0.0000
###	1.9021	-1.8090	-0.5878
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###	-1.1756	0.6910	0.9511
###	1.9021	-0.5878	-1.8090
###	0.0000	0.0000	0.0000
###	-1.9021	-0.5878	1.8090
###	1.1756	0.6910	-0.9511
###	1.1756	0.9511	-0.6910
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###	0.0000	0.0000	0.0000
###	1.9021	1.8090	0.5878
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###	-1.1756	-0.6910	-0.9511
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###	1.1756	-0.6910	0.9511
###	1.1756	-0.9511	0.6910
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###	1.9021	-1.8090	-0.5878
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###	-1.1756	0.6910	0.9511
###	1.9021	-0.5878	-1.8090
###	0.0000	0.0000	0.0000
###	-1.9021	-0.5878	1.8090
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###	1.1756	0.9511	-0.6910
###	-1.9021	-1.8090	0.5878
###	0.0000	0.0000	0.0000
###	1.9021	1.8090	0.5878

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###	-1.1756	-0.6910	-0.9511
###	1.9021	0.5878	1.8090
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###	1.1756	-0.9511	0.6910
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###	0.0000	0.0000	0.0000
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###	-1.1756	0.6910	0.9511
###	1.9021	-0.5878	-1.8090
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###	1.1756	0.9511	-0.6910
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###	-1.1756	-0.6910	-0.9511
###	1.9021	0.5878	1.8090
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###	-1.1756	0.6910	0.9511
###	1.9021	-0.5878	-1.8090
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###	1.1756	0.9511	-0.6910
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###	0.0000	0.0000	0.0000