

Catalog of scales made with Additive Sequences for “The MOSsy Slopes of Mt. Meru.
Warren Burt 2002-2004.

These scales embody the following additive sequence rules

Sequence Rule	Limit	Generator (cents)	MOS sizes
$A_n = A_{n-2} + A_{n-1}$	1.618033989	833.09297	MOS 7, 10, 13, 23
$B_n = B_{n-3} + B_{n-1}$	1.465571232	661.755708	MOS 5, 7, 9, 11, 20
$C_n = C_{n-3} + C_{n-2}$	1.324717957	486.822277	MOS 5, 7, 12
$D_n = D_{n-4} + D_{n-1}$	1.380277569	557.950101	MOS 5, 7, 9, 11, 13, 15, 28
$E_n = E_{n-4} + E_{n-3}$	1.220744085	345.312945	MOS 7, 10, 17
$F_n = F_{n-5} + F_{n-1}$	1.324717957	486.822277	MOS 5, 7, 12
$G_n = G_{n-5} + G_{n-2}$	1.236505703	367.522672	MOS 7, 10, 13, 23
$H_n = H_{n-5} + H_{n-3}$	1.193859111	306.759111	MOS 4, 7, 11
$I_n = I_{n-5} + I_{n-4}$	1.167303978	267.818363	MOS 5, 9, 13, 22
$J_n = J_{n-6} + J_{n-1}$	1.28519903326	434.390161	MOS 5, 8, 11, 14, 25
$K_n = K_{n-6} + K_{n-5}$	1.13472413840	218.809930	MOS 5,6,11

The Just scales are made by taking an additive sequence rule and turning the results into harmonics within an octave. The Pythagorean scales are made by stacking the Generator N times and reducing the scale to be within an octave. The generator is the limit the sequence rule “tends to” turned into a ratio over 1 and converted into cents. The sizes of the scales (N) are given by the MOS numbers. These MOS scales will, for Pythagorean scales, generate scales with 2 and only 2 sizes of step intervals. For Just scales, they will generate a just scale with the same number of scale degrees between each new number of the series turned a harmonic. This is the property known as “well-formedness.” The MOS numbers “interlock” just like white and black keys on a piano to form a complete scale with two subset scales which are also MOS. The scales are listed one to a page.

SCALE A (JUST)

Rule: $A_n = A_{n-2} + A_{n-1}$

MOS division: $13 + 10 = 23$

Series: 1 1 2 3 5 8 13 21 34 55 89 144 233 377 610 987 1597 2584 4181 6765 10946
17711 28657 46368 75025 121393

Scale deg.	Ratio	Cents
0:	1/1	0.000
1:	4181/4096	35.559
2:	17/16	104.955
3:	17711/16384	134.830
4:	9/8	203.910
5:	75025/65536	234.101
6:	305/256	303.199
7:	5/4	386.314
8:	323/256	402.468
9:	21/16	470.781
10:	5473/4096	501.739
11:	89/64	570.880
12:	1449/1024	601.010
13:	377/256	670.105
14:	3/2	701.955
15:	1597/1024	769.378
16:	13/8	840.528
17:	6765/4096	868.649
18:	55/32	937.632
19:	28657/16384	967.920
20:	233/128	1037.023
21:	121393/65536	1067.191
22:	987/512	1136.288
23:	2/1	1200.000

Order of generation

0 14 7 16 9 2 18 11 4 20 13 6 22 15 8 1 17 10 3 19 12 5 21

MOS division into 13 + 10

10: 1 3 5 8 10 12 15 17 19 21

13: 0 2 4 6 7 9 11 13 14 16 18 20 22 23

SCALE A (PYTHAGOREAN):

Rule: The limit ratio 1.618033989/1 turned into a generator of 833.09297 cents.

MOS division: 13 + 10 = 23

Scale deg.	Cents
0:	0.000 cents
1:	30.174 cents
2:	99.271 cents
3:	129.445 cents
4:	198.542 cents
5:	228.716 cents
6:	297.813 cents
7:	327.987 cents
8:	397.084 cents
9:	466.181 cents
10:	496.354 cents
11:	565.451 cents
12:	595.625 cents
13:	664.722 cents
14:	694.896 cents
15:	763.993 cents
16:	833.090 cents
17:	863.264 cents
18:	932.361 cents
19:	962.535 cents
20:	1031.632 cents
21:	1061.806 cents
22:	1130.903 cents
23:	1200.000 cents

Order of generation:

0 16 9 2 18 11 4 20 13 6 22 15 8 1 17 10 3 19 12 5 21 14 7

MOS division into 13 + 10

10: 1 3 5 7 10 12 14 17 19 21

13: 0 2 4 6 8 9 11 13 15 16 18 20 22 23

SCALE B (JUST)

Rule: $B_n = B_{n-3} + B_{n-1}$

MOS division: $11 + 9 = 20$

Series: 1 1 1 2 3 4 6 9 13 19 28 41 60 88 129 189 277 406 595 872 1278 1873 2745 4023
5896

Scale deg.	Ratio	Cents
0:	1/1	0.000
1:	129/128	13.473
2:	277/256	136.491
3:	9/8	203.910
4:	595/512	260.095
5:	19/16	297.513
6:	639/512	383.607
7:	41/32	429.062
8:	2745/2048	507.109
9:	11/8	551.318
10:	737/512	630.625
11:	189/128	674.691
12:	3/2	701.955
13:	203/128	798.403
14:	13/8	840.528
15:	109/64	921.821
16:	7/4	968.826
17:	1873/1024	1045.362
18:	15/8	1088.269
19:	4023/2048	1168.867
20:	2/1	1200.000

Order of generation:

0 12 3 14 5 16 7 18 9 1 11 2 13 4 15 6 17 8 19 10

MOS division into $11 + 9 = 20$

9: 2 4 6 8 10 13 15 17 19

11: 0 1 3 5 7 9 11 12 14 16 18 20

SCALE B (PYTHAGOREAN):

Rule: The limit ratio 1.465571232/1 turned into a generator of 661.755708 cents.

MOS division $11 + 9 = 20$

Scale deg.	Cents
0:	0.000 cents
1:	79.313 cents
2:	123.511 cents
3:	202.824 cents
4:	247.023 cents
5:	326.336 cents
6:	370.534 cents
7:	449.847 cents
8:	494.046 cents
9:	573.358 cents
10:	617.557 cents
11:	661.756 cents
12:	741.069 cents
13:	785.267 cents
14:	864.580 cents
15:	908.779 cents
16:	988.091 cents
17:	1032.290 cents
18:	1111.603 cents
19:	1155.801 cents
20:	1200.000 cents

Order of generation:

0 11 2 13 4 15 6 17 8 19 10 1 12 3 14 5 16 7 18 9

MOS division into $11 + 9 = 20$

9: 1 3 5 7 9 12 14 16 18

11: 0 2 4 6 8 10 11 13 15 17 19 20

SCALE C (JUST):

Rule: $C_n = C_{n-3} + C_{n-2}$

MOS division: $7 + 5 = 12$

Series: 1 0 1 1 1 2 2 3 4 5 7 9 12 16 21 28 37 49 65 86 114 151

Scale deg.	Ratio	Cents
0:	1/1	0.000
1:	65/64	26.841
2:	9/8	203.910
3:	37/32	251.344
4:	151/128	286.086
5:	5/4	386.314
6:	21/16	470.781
7:	43/32	511.518
8:	3/2	701.955
9:	49/32	737.652
10:	7/4	968.826
11:	57/32	999.468
12:	2/1	1200.000

Order of generation:
0 8 5 10 2 6 3 9 1 7 11 4

MOS division into $7 + 5 = 12$
5: 1 4 7 9 11
7: 0 2 3 5 6 8 10 12

SCALE C (PYTHAGOREAN):

Rule: The limit ratio of 1.324717975/1 turned into a generator of 486.822277 cents.

MOS division $7 + 5 = 12$

Scale deg.	Cents
0:	0.000 cents
1:	34.111 cents
2:	68.223 cents
3:	260.467 cents
4:	294.578 cents
5:	486.822 cents
6:	520.934 cents
7:	555.045 cents
8:	747.289 cents
9:	781.400 cents
10:	973.645 cents
11:	1007.756 cents
12:	1200.000 cents

Order of generation:

0 5 10 3 8 1 6 11 4 9 2 7

MOS division into $7 + 5 = 12$

5: 2 4 7 9 11

7: 0 1 3 5 6 8 10 12

SCALE D (JUST):

Rule: $D_n = D_{n-4} + D_{n-1}$

MOS division: $15 + 13 = 28$

Series: 1 1 1 2 3 4 5 7 10 14 19 26 36 50 69 95 131 181 250 345 476 657 907 1252 1728
2385 3292 4544 6272 8657 11949 16493 22765 31422

Scale deg.	Ratio	Cents
0:	1/1	0.000
1:	16493/16384	11.479
2:	131/128	40.108
3:	8657/8192	95.582
4:	69/64	130.229
5:	71/64	179.697
6:	9/8	203.910
7:	2385/2048	263.728
8:	19/16	297.513
9:	313/256	348.023
10:	5/4	386.314
11:	657/512	431.699
12:	345/256	516.543
13:	22765/16384	569.436
14:	181/128	599.815
15:	11949/8192	653.523
16:	95/64	683.827
17:	3/2	701.955
18:	49/32	737.652
19:	25/16	772.627
20:	823/512	821.698
21:	13/8	840.528
22:	27/16	905.865
23:	7/4	968.826
24:	907/512	989.950
25:	119/64	1073.781
26:	15711/8192	1127.385
27:	125/64	1158.941
28:	2/1	1200.000

Order of generation:

0 17 10 23 8 21 6 19 4 16 2 14 27 12 25 11 24 9 22 7 20 5 18 3 15 1 13 26

MOS division into $15 + 13 = 28$

13: 1 3 5 7 9 11 13 15 18 20 22 24 26
15: 0 2 4 6 8 10 12 14 16 17 19 21 23 25 27 28

SCALE D (PYTHAGOREAN):

Rule: The limit ratio of 1.380277569/1 turned into a generator of 557.950101 cents.

MOS division 15 + 13 = 28

Scale deg.	Cents
0:	0.000 cents
1:	53.351 cents
2:	106.703 cents
3:	137.451 cents
4:	190.802 cents
5:	221.551 cents
6:	274.902 cents
7:	305.651 cents
8:	359.002 cents
9:	389.750 cents
10:	443.102 cents
11:	473.850 cents
12:	527.202 cents
13:	557.950 cents
14:	611.301 cents
15:	664.653 cents
16:	695.401 cents
17:	748.753 cents
18:	779.501 cents
19:	832.852 cents
20:	863.601 cents
21:	916.952 cents
22:	947.701 cents
23:	1001.052 cents
24:	1031.800 cents
25:	1085.152 cents
26:	1115.900 cents
27:	1169.252 cents
28:	1200.000 cents

Order of generation:

0 13 26 11 24 9 22 7 20 5 18 3 16 1 14 27 12 25 10 23 8 21 6 19 4 17 2 15

MOS division into 15 + 13 = 28

13: 2 4 6 8 10 12 15 17 19 21 23 25 27

15: 0 1 3 5 7 9 11 13 14 16 18 20 22 24 26 28

SCALE E (JUST):

Rule: $E_n = E_{n-4} + E_{n-3}$

MOS division: $10 + 7 = 17$

Series: 1 0 0 1 1 0 1 2 1 1 3 3 2 4 6 5 6 10 11 11 16 21 22 27 37 43 49 64 80 92 113 144
172 205 257 316 377 462

Scale deg.	Ratio	Cents
0:	1/1	0.000
1:	257/256	6.749
2:	9/8	203.910
3:	37/32	251.344
4:	79/64	364.537
5:	5/4	386.314
6:	21/16	470.781
7:	43/32	511.518
8:	11/8	551.318
9:	23/16	628.274
10:	377/256	670.105
11:	3/2	701.955
12:	49/32	737.652
13:	205/128	815.376
14:	27/16	905.865
15:	113/64	984.215
16:	231/128	1022.099
17:	2/1	1200.000

Order of generation:

0 11 5 8 6 14 3 7 12 9 15 2 13 1 4 10 16

MOS division into $10 + 7 = 17$

7: 1 2 4 10 13 15 16
10: 0 3 5 6 7 8 9 11 12 14 17

(Note the incredibly strange division of the scale here - maybe this is due to the very redundant nature of this series. The MOS division of the Pythagorean scale, below, is much more typical of MOS divisions.)

SCALE E (PYTHAGOREAN):

Rule: The limit ratio of 1.220744085/1 turned into a generator of 345.312945 cents.

MOS division: $10 + 7 = 17$

Scale deg.	Cents
0:	0.000 cents
1:	17.191 cents
2:	34.381 cents
3:	181.252 cents
4:	198.442 cents
5:	345.313 cents
6:	362.504 cents
7:	379.694 cents
8:	526.565 cents
9:	543.755 cents
10:	690.626 cents
11:	707.817 cents
12:	725.007 cents
13:	871.878 cents
14:	889.068 cents
15:	1035.939 cents
16:	1053.129 cents
17:	1200.000 cents

Order of generation:

0 5 10 15 3 8 13 1 6 11 16 4 9 14 2 7 12

MOS division into $10 + 7 = 17$

7: 2 4 7 9 12 14 16

10: 0 1 3 5 6 8 10 11 13 15 17

SCALE F (JUST):

Rule: $F_n = F_{n-5} + F_{n-1}$

MOS division: $7 + 5 = 12$

Series: 1 1 1 1 1 2 3 4 5 6 8 11 15 20 26 34 45 60 80 106 140 185 245

Scale deg.	Ratio	Cents
0:	1/1	0.000
1:	17/16	104.955
2:	35/32	155.140
3:	5/4	386.314
4:	11/8	551.318
5:	45/32	590.224
6:	185/128	637.658
7:	3/2	701.955
8:	13/8	840.528
9:	53/32	873.505
10:	15/8	1088.269
11:	245/128	1123.966
12:	2/1	1200.000

Order of generation:

0 7 3 4 10 8 1 5 9 2 6 11

MOS division into $7 + 5 = 12$

5: 2 5 6 9 11

7: 0 1 3 4 7 8 10 12

SCALE F (PYTHAGOREAN):

This scale is identical in every respect with Scale C (Pythagorean). The limit is the same, the pitches are the same, the MOS division is the same. Refer to the page for Scale C (Pythagorean) for data on this scale.

SCALE G (JUST):

Rule: $G_n = G_{n-5} + G_{n-2}$

MOS division: $13 + 10 = 23$

Series: 1 0 1 0 1 1 1 2 1 3 2 4 4 5 7 7 1 1 16 18 23 29 34 45 52 68 81 102 126 154 194
235 296 361 450 555 685 851

Scale deg.	Ratio	Cents
0:	1/1	0.000
1:	17/16	104.955
2:	555/512	139.613
3:	9/8	203.910
4:	37/32	251.344
5:	77/64	320.144
6:	5/4	386.314
7:	81/64	407.820
8:	685/512	503.952
9:	87/64	531.532
10:	11/8	551.318
11:	45/32	590.224
12:	361/256	595.026
13:	23/16	628.274
14:	3/2	701.955
15:	51/32	806.910
16:	13/8	840.528
17:	851/512	879.618
18:	7/4	968.826
19:	225/128	976.537
20:	29/16	1029.577
21:	235/128	1051.820
22:	63/32	1172.736
23:	2/1	1200.000

Order of generation:

0 14 6 18 10 3 13 20 1 11 16 7 15 22 5 9 21 4 12 19 2 8 17

MOS division into $13 + 10 = 23$

10: 2 4 5 8 9 12 17 19 21 22

13: 0 1 3 6 7 10 11 13 14 15 16 18 20 23

SCALE G (PYTHAGOREAN):

Rule: The limit ratio of 1.236505703/1 turned into a generator of 367.522672 cents.

MOS division: 13 + 10 = 23

Scale deg.	Cents
0:	0.000 cents
1:	75.227 cents
2:	150.453 cents
3:	172.659 cents
4:	247.885 cents
5:	270.091 cents
6:	345.317 cents
7:	367.523 cents
8:	442.749 cents
9:	517.976 cents
10:	540.181 cents
11:	615.408 cents
12:	637.613 cents
13:	712.840 cents
14:	735.045 cents
15:	810.272 cents
16:	885.499 cents
17:	907.704 cents
18:	982.931 cents
19:	1005.136 cents
20:	1080.363 cents
21:	1102.568 cents
22:	1177.795 cents
23:	1200.000 cents

Order of generation:

0 7 14 21 5 12 19 3 10 17 1 8 15 22 6 13 20 4 11 18 2 9 16

MOS division into 13 + 10 = 23

10: 2 4 6 9 11 13 16 18 20 22

13: 0 1 3 5 7 8 10 12 14 15 17 19 21 23

SCALE H (JUST):

Rule: $H_n = H_{n-5} + H_{n-3}$

MOS division: $7 + 4 = 11$

(With MOS scale sizes above 5, there are no consecutive scales until MOS $47 + 43 = 90$, so we here use MOS $7 + 4 = 11$)

Series: 1 3 1 3 4 2 6 5 5 10 7 11 15 12 21 22 23 36 34 44 58

Scale deg.	Ratio	Cents
0:	1/1	0.000
1:	17/16	104.955
2:	9/8	203.910
3:	5/4	386.314
4:	21/16	470.781
5:	11/8	551.318
6:	23/16	628.274
7:	3/2	701.955
8:	7/4	968.826
9:	29/16	1029.577
10:	15/8	1088.269
11:	2/1	1200.000

Order of generation:

0 7 3 8 5 10 4 6 2 1 9

MOS division into $7 + 4 = 11$

4: 1 2 6 9

7: 0 3 4 5 7 8 10 11

SCALE H (PYTHAGOREAN):

Rule: The limit ratio of $1.193859111/1$ turned into a generator of 306.759111 cents.

MOS division: $7 + 4 = 11$

(See above for explanation of scale sizes used.)

Scale deg.	Cents
0:	0.000 cents
1:	27.036 cents
2:	54.073 cents
3:	306.759 cents
4:	333.796 cents
5:	360.832 cents
6:	613.518 cents
7:	640.555 cents
8:	667.591 cents
9:	920.277 cents
10:	947.314 cents
11:	1200.000 cents

Order of generation:

0 3 6 9 1 4 7 10 2 5 8

MOS division into $7 + 4 = 11$

4: 2 5 8 10

7: 0 1 3 4 6 7 9 11

SCALE I (JUST):

Rule: $I_n = I_{n-5} + I_{n-4}$

MOS division: $13 + 9 = 22$

Series: 1 3 3 1 1 4 6 4 2 5 10 10 6 7 15 20 16 13 22 35 36 29 35 57 71 65 64 92 128 136
129 156 220 264 265 285 376 484

Scale deg.	Ratio	Cents
0:	1/1	0.000
1:	265/264	6.545
2:	129/128	13.473
3:	65/64	26.841
4:	17/16	104.955
5:	95/88	132.509
6:	35/32	155.140
7:	71/64	179.697
8:	9/8	203.910
9:	39/32	342.483
10:	5/4	386.314
11:	11/8	551.318
12:	23/16	628.274
13:	47/32	665.507
14:	3/2	701.955
15:	13/8	840.528
16:	55/32	937.632
17:	7/4	968.826
18:	57/32	999.468
19:	29/16	1029.577
20:	15/8	1088.269
21:	121/64	1102.636
22:	2/1	1200.000

Order of generation:

0 14 10 17 20 15 11 6 8 19 18 7 3 12 4 2 9 16 1 5 13 21

MOS division into $13 + 9 = 22$

9: 1 2 4 5 9 12 13 16 21
13: 0 3 6 7 8 10 11 14 15 17 18 19 20 22

SCALE I (PYTHAGOREAN):

Rule: The limit ratio of 1. 167303978/1 turned into a generator of 267.818363 cents.

MOS division: 13 + 9 = 22

Scale deg.	Cents
0:	0.000 cents
1:	10.347 cents
2:	20.694 cents
3:	139.082 cents
4:	149.429 cents
5:	267.816 cents
6:	278.164 cents
7:	288.511 cents
8:	406.898 cents
9:	417.245 cents
10:	535.633 cents
11:	545.980 cents
12:	556.327 cents
13:	674.714 cents
14:	685.062 cents
15:	803.449 cents
16:	813.796 cents
17:	824.143 cents
18:	942.531 cents
19:	952.878 cents
20:	1071.265 cents
21:	1081.613 cents
22:	1200.000 cents

Order of generation:

0 5 10 15 20 3 8 13 18 1 6 11 16 21 4 9 14 19 2 7 12 17

MOS division into 13 + 9 = 22

9: 2 4 7 9 12 14 17 19 21
13: 0 1 3 5 6 8 10 11 13 15 16 18 20 22

SCALE J (JUST):

Rule: $J_n = J_{n-6} + J_{n-1}$

MOS division: $14 + 11 = 25$

Series: 1 2 3 4 5 6 7 9 12 16 21 27 34 43 55 71 92 119 153 196 251 322 414 533 686 882
1133 1455 1869 2402

Scale deg.	Ratio	Cents
0:	1/1	0.000
1:	533/512	69.590
2:	17/16	104.955
3:	1133/1024	175.119
4:	71/64	179.697
5:	9/8	203.910
6:	1201/1024	276.025
7:	153/128	308.865
8:	5/4	386.314
9:	161/128	397.100
10:	21/16	470.781
11:	343/256	506.478
12:	43/32	511.518
13:	1455/1024	608.164
14:	23/16	628.274
15:	3/2	701.955
16:	49/32	737.652
17:	207/128	832.184
18:	27/16	905.865
19:	55/32	937.632
20:	441/256	941.562
21:	7/4	968.826
22:	1869/1024	1041.661
23:	119/64	1073.781
24:	251/128	1165.852
25:	2/1	1200.000

Order of generation:

0 15 8 21 5 10 18 2 12 19 4 14 23 7 16 24 9 17 1 11 20 3 13 22 6

MOS division into $14 + 11 = 25$

11: 1 3 6 9 11 13 16 17 20 22 24
14: 0 2 4 5 7 8 10 12 14 15 18 19 21 23 25

SCALE J (PYTHAGOREAN):

Rule: The limit ratio of 1.28519903326/1 turned into a generator of 434.390161 cents.

MOS division: 14 + 11 = 25

Scale deg.	Cents
0:	0.000 cents
1:	81.462 cents
2:	103.170 cents
3:	184.633 cents
4:	206.341 cents
5:	287.803 cents
6:	309.511 cents
7:	390.974 cents
8:	412.682 cents
9:	434.390 cents
10:	515.852 cents
11:	537.561 cents
12:	619.023 cents
13:	640.731 cents
14:	722.193 cents
15:	743.902 cents
16:	825.364 cents
17:	847.072 cents
18:	868.780 cents
19:	950.243 cents
20:	971.951 cents
21:	1053.413 cents
22:	1075.121 cents
23:	1156.583 cents
24:	1178.292 cents
25:	1200.000 cents

Order of generation:

0 9 18 2 11 20 4 13 22 6 15 24 8 17 1 10 19 3 12 21 5 14 23 7 16

MOS division into 14 + 11 = 25

11: 1 3 5 7 10 12 14 16 19 21 23

14: 0 2 4 6 8 9 11 13 15 17 18 20 22 24 25

SCALE K (JUST):

Rule: $K_n = K_{n-6} + K_{n-5}$

MOS division: $6 + 5 = 11$

Series: 0 0 0 0 0 1 0 0 0 0 1 1 0 0 0 1 2 1 0 0 1 3 3 1 0 1 4 6 4 1 1 5 10 10 5 2 6 15 20 15
7 8 21 35 35 22 15 29 56 70 57 37

Scale deg.	Ratio	Cents
0:	1/1	0.000
1:	35/32	155.140
2:	37/32	251.344
3:	5/4	386.314
4:	21/16	470.781
5:	11/8	551.318
6:	3/2	701.955
7:	7/4	968.826
8:	57/32	999.468
9:	29/16	1029.577
10:	15/8	1088.269
11:	2/1	1200.000

Order of generation:
0 6 3 10 7 4 1 5 9 8 2

MOS division into $6 + 5 = 11$

5: 1 2 5 8 9

6: 0 3 4 6 7 10 11

SCALE K (PYTHAGOREAN):

Rule: The limit ratio of 1.13472413840/1 turned into a generator of 218.809930 cents.

MOS division: 6 + 5 = 11

Scale deg.	Cents	
0:	1/1	0.000
1:	112.860 cents	112.860
2:	218.810 cents	218.810
3:	331.669 cents	331.669
4:	437.620 cents	437.620
5:	550.479 cents	550.479
6:	656.430 cents	656.430
7:	769.289 cents	769.289
8:	875.240 cents	875.240
9:	988.099 cents	988.099
10:	1094.050 cents	1094.050
11:	2/1	1200.000

Order of generation:

0 2 4 6 8 10 1 3 5 7 9

MOS division into 6 + 5 = 11

5: 1 3 5 7 9

6: 0 2 4 6 8 10 11