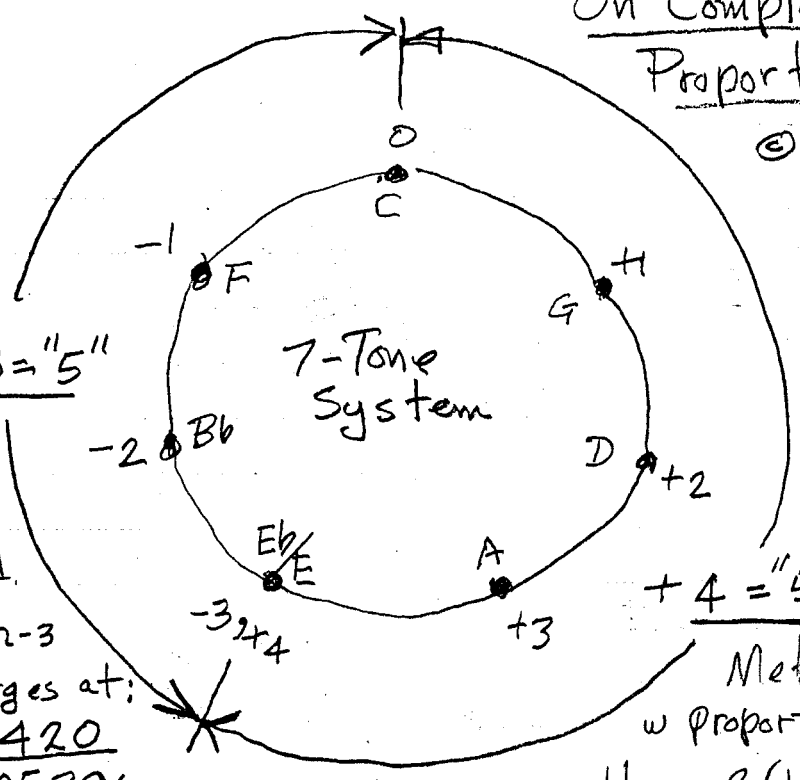
On Complementary Proportional Triads



-3 = "5"

Meta-Maliva
ω, Proportional Triad.

$P_n = (2P_{n-4}) + P_{n-3}$

P_n / P_{n-1} converges at:

1.35320996420

$\log_2$ .43638570539 6

Example of recurrent sequence:

4.5, 6, 8, 11, 15, 20, 27, 37, 50, 67, 91, 124, 167, 225, 306, 415, 559, 756, 1027, 1389, 1874, 2539, 3443, 4652, 6287, 8521, 11538, 15591, 21095 etc.

MOS at: $\frac{1}{1}, \frac{1}{2}, \frac{1}{3}, \frac{2}{5}, \frac{3}{7}, \frac{4}{9},$

$\frac{7}{16}, \frac{10}{23}, \frac{17}{39}, \frac{24}{55}, \frac{31}{71}$ etc

+4 = "5"

Meta-meantone
ω Proportional triad

$H_n = 2(H_{n-4} + H_{n-3})$

H_n / H_{n-1} converges at:

1.49453018048

$\log_2$ .57969203 1034

Example of Recurrent Sequence:

1, 2.5, 3, 5, 7, 11, 16, 24, 36, 54, 80, 120, 180, 268, 400, 600, 896, 1336, 2000, 2992, 4464, 6672, 9984, 14912, 22272, 33312, 49792, 74368, 111168, 166208, 248320, 371072, 554752, 829056, 1238784 etc

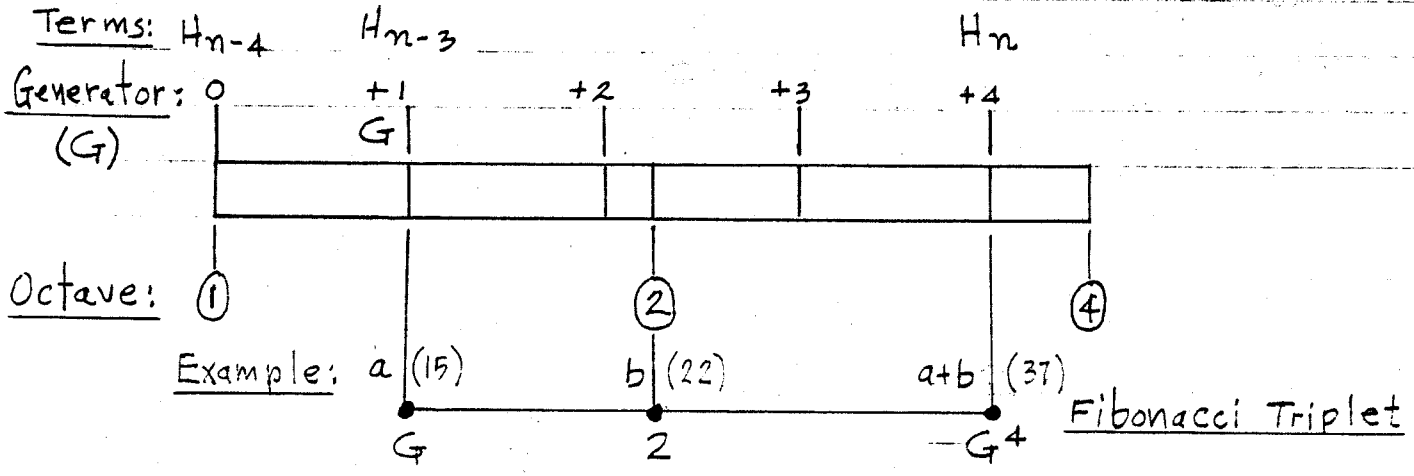
MOS at: $\frac{1}{1}, \frac{1}{2}, \frac{2}{3}, \frac{3}{5}, \frac{4}{7}, \frac{7}{12}, \frac{11}{19},$

$\frac{18}{31}, \frac{29}{50}, \frac{40}{69}, \frac{51}{88}$ etc

$G = (2 + G)^{(1/4)}$, Meta-Mavila

10·Oct·97-E.W.

(P.7d)



Fibonacci Triplet

Recurrence Relation:

$$2H_{n-4} + H_{n-3} = H_n$$

(1, 1, 1, 1, 3, 3, 3, 5, 9, 9, 11, 19, 27, 29, 41)

- NLIS -

G Paraphrase:

$\Rightarrow G = (2 + G)^{(1/4)}$

$= 1.3332096420\cdots$

$\log_2 = .436385705396$

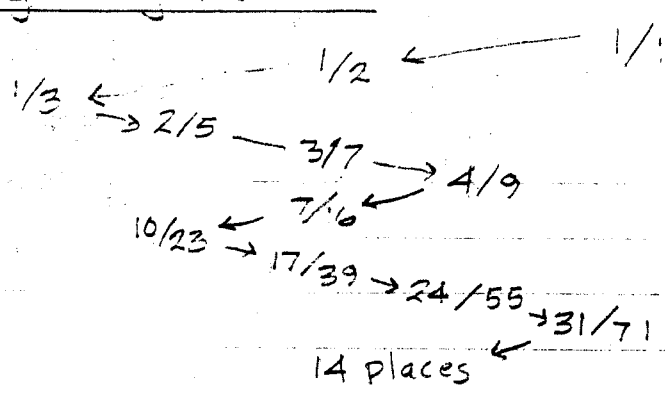
Re-Seed Example:

6, 8, 11, 15, 20, 27, 37, 50, 67, 91, 124, 167, 225, 306, 415, 559, 756, etc.

1/N Pattern

	.43638...	0/1
←	2	.291
→	3	.429
←	2	.325
→	3	.068
	14	.688
	1	.452
	2	.290
	4	.782
	1	.277

Zig-Zag Pattern



Ref. Linear Tuning of 4-"5"-"6" Arithmetic Mean (-3 = 5), 1989, Erv Wilson

This is the recurrent sequence for 4-"5"-"6" arith. mean (-3=5)

$P_n = 2P_{n-4} + P_{n-3}$

$(54 \times 2) + 72 = 180$

	27	36	48	135					
40.5	54	72	96	135	180	240	327	450	600
	1	2	3	4	1,	2,	3,	4,	

Converges → 1.353209964 20

$\log_2$ .436385705396

Reference: Linear Tuning of 4-"5"-"6" arithmetic mean (-3=5) by Erv Wilson 1989

$P_n = 2P_{n-4} + P_{n-3}$

Ref: Chopi Scale from Mavila

RCL 1	RCL 4
X	X
2	2
=	=
+	+
RCL 2	RCL 1
=	=
STO 1,	STO 4,
RCL 2	÷
X	RCL 3
2	=
=	STO 5
+ RCL 3	——·——
=	
STO 2,	
RCL 3	
X	
2	
=	
+	
RCL 4	
=	
STO 3,	

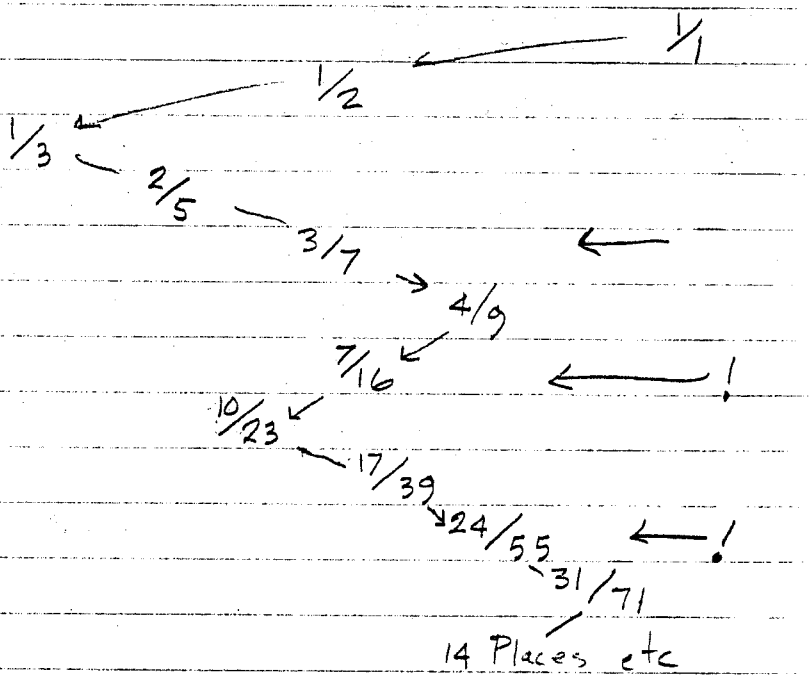
⇨ Also try: 3.25, 4.5, 6, 8, 11, 15, 20, 27, 37, 50, 67, 91, 124, 167, 225, 306, 415, 559, 756, 1027, 1389, 1874, 2539, 3443, 4652, 6287, 8521, 11538, 15591, 21095

Meta-Mavila, $(P_n = 2P_{n-4} + P_{n-3})$ 1,353 209 964 20

©1995 by Erv Wilson

$\log_2$ .436 385 705 396

	1/14	PaHern
←	2	.291
→	3	.429
←	2	.325
→	3	.068
	14	.688
	1	.452
	2	.209
	4	.782
	1	.277
	3	.607



Note: see Linear Tuning of 4-"5"-"6" arithmetic mean (-3=5) by Erv Wilson 1989.

The Recurrent Sequence for 4-"5"-"6" Arithmetic Mean (-3=5)

$P_n = 2P_{n-4} + P_{n-3}$, which converges on 1.353209964 20

$\log_e = .436385705396$

0 ⓪ 8, 256 (+23)

1 (+7) 67, 268

2 (+14) 559, 279.5

3 (-2) 4.5, 288 (+21) 4652, 290.75

4 (9) (+5) 37, 296

5 (+12) 306, 306

6 (+19) 2539, 317.375

7 (+3) 20, 320

8 (+10) 167, 334

9 (+17) 1389, 347.25

10 (+1) 11, 352 (+24)

11 (+8) 91, 364

12 (+15) 756, 378

13 (-1) 6, 384 (+22) 6287, 392.9375

14 (+6) 50, 400

15 (+13) 415, 415

16 (-3) 3.25, 416 (+20) 3443, 430.375

17 (13) (+4) 27, 432

18 (+11) 225, 225

19 (+18) 1874, 234.25

20 (+2) 15, 240

21 (+9) 124, 248

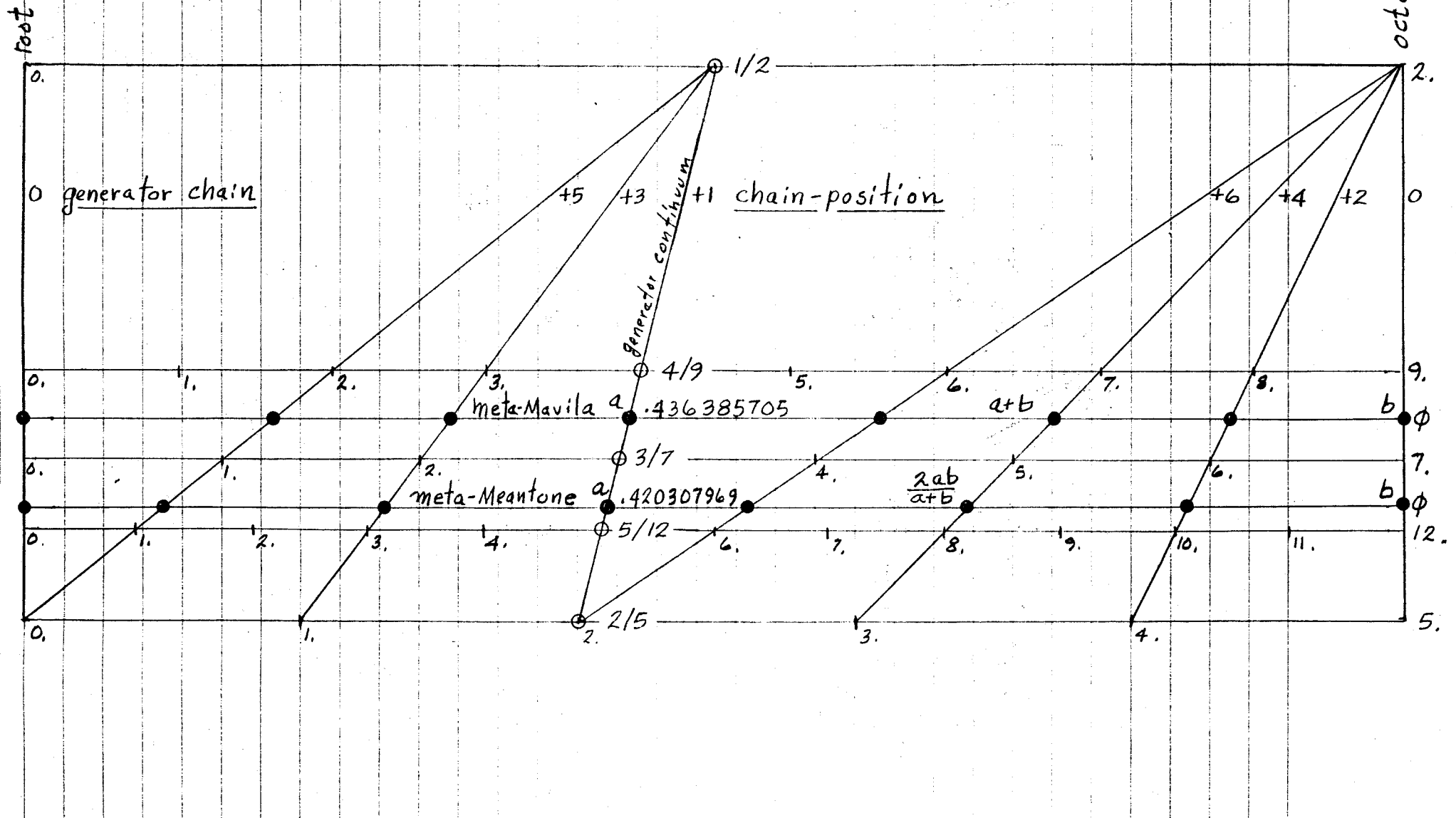
22 (+16) 1027, 256.75

23% ⓪ 8, 256 (+23)

Ref: Chopi scale from Mavila

160CT97-E.W.

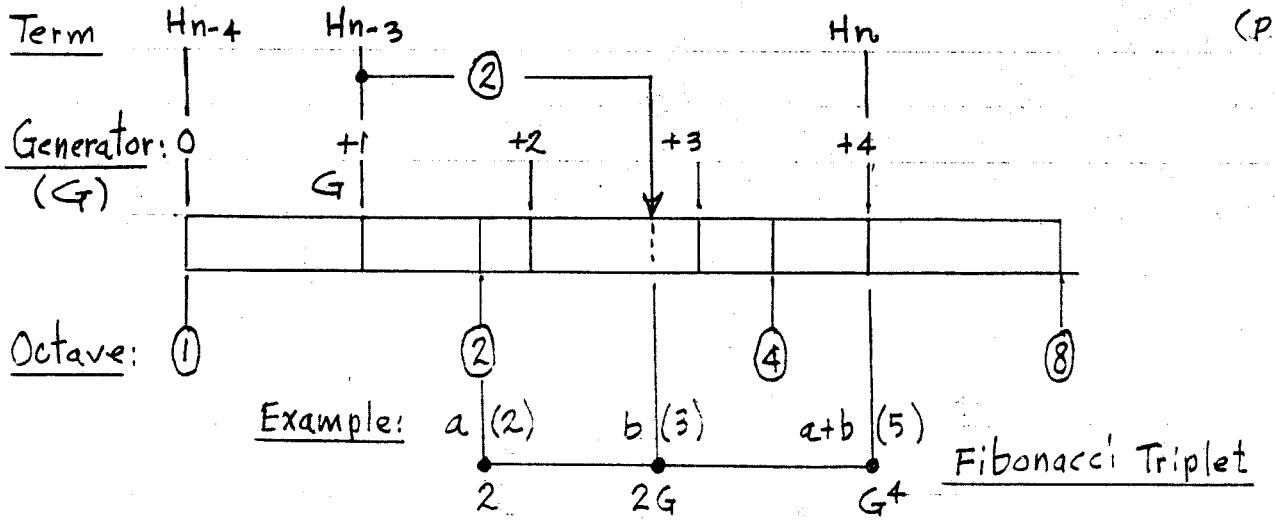
Enantiodromia of Meta-Meantone into Meta-Mavila



$G = (2 + 2G)^{(\frac{1}{4})}$, Meta-Meantone

10·OCT·97-E.W.

(p 6d)



Fibonacci Triplet

Recurrence Relation:

$2H_{n-4} + 2H_{n-3} = H_n$

G Paraphrase:

$\Rightarrow G = (2 + 2G)^{(1/4)}$

$= 1.494530180\overline{48}$

$\log_2 = .57969203\overline{1034}$

Example re-seed:

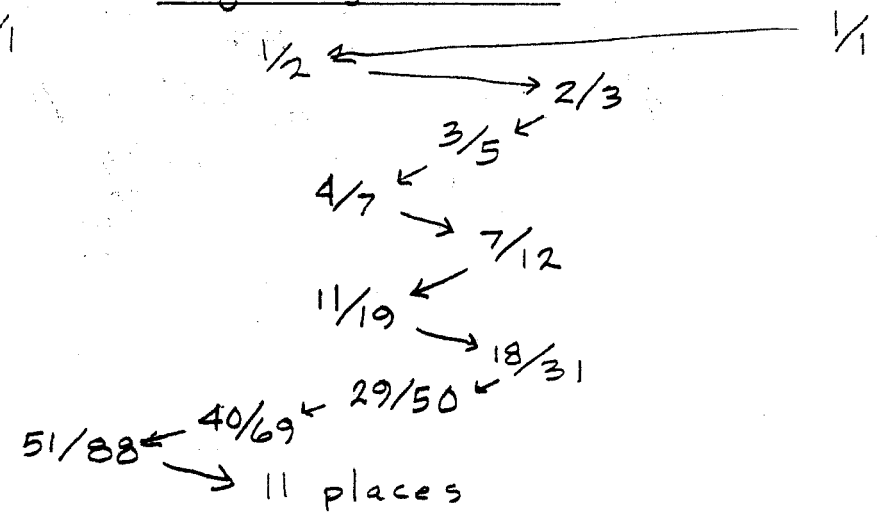
8 12 18 27 40 60 90 134 200 300 448 668 1000 1496 2232
3336 4992 7456 11136 etc, *

1/N Pattern

.57969... 0/1

←	1	.725
→	1	.379
←	2	.637
→	1	.569
←	1	.755
→	1	.323
←	3	.088
	11	.320
	3	.123

Zig-Zag Pattern



Ref: Linear Tuning of 4-"5"-"6" Arithmetic Mean (+4 = "5"), 1989, Erv Wilson

* 1, 1, 1, 1, 4, 4, 4, 10, 16, 16, 28, 52, 64, 88, 160, etc NLIS.

For Kraig Grady

Proportional "4, 5, 6" Sequence ?

dated
Oct 16, 1993
Erv Wilson

Meta-Meantone

ref John Harrison's scale

0 +1 +2 +3 +4

3 4.5 6.75 10.125

1/1 16/11 24/16 36/24 54/36 80/54 120/80 180/120

27/18 40/27 60/40 90/60 134/90 200/134 300/200

(A+B)×2=E etc.

A B E

1 2.5 3 5 7 11 16 24 36 54 80 120 180 268 400 600

÷4 (67)

Proportional Triad(s)

(1) (2) (1,)

(2) (3) (2,)

(3) (4) (3,)

Converges on 1.49453018048

(See also proportional "4,5,6" 1992)

To get a quick convergence (4) (1,) (4,)

(	C	C	C
RCL 1	RCL 3	RCL 1	RCL 3
+	+	+	+
RCL 2	RCL 4	RCL 2	RCL 4
)	)	)	)
×	×	×	×
2	2	2	2
=	=	=	=
STO 1,	STO 3,	STO 1,	STO 3,
(	(	÷	÷
RCL 2	RCL 4	RCL 4	RCL 2,
+	+	=	=
RCL 3	RCL 1,	STO 5	STO 7
)	)	C	(
×	×	RCL 2	RCL 4
2	2	+	+
=	=	RCL 3	RCL 1,
STO 2,	STO 4,	)	)
	÷	×	×
	RCL 3,	2	2
	=	= ÷RCL1 = STO6	= ÷RCL 3, = STO8
		STO 2,	STO 4,

This stores the ratios for viewing at 5, 6, 7, 8

135 180 240 320 432 5792

27 108 144 192 2592

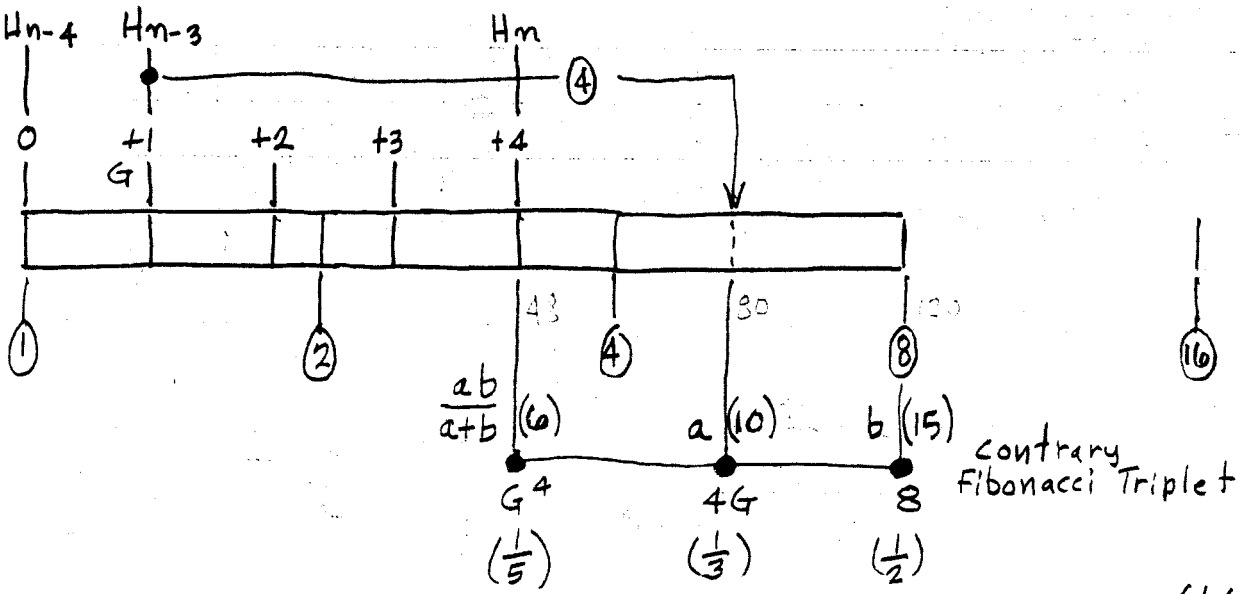
405 540 720 960 1296

3 4

15 20 48

Study on Contrary Meta-Meantone

$\frac{2AB}{A+B}$ 24 Oct 97 - E.W.



$(8H_{m-4} \times 4H_{m-3}) / (8H_{m-4} + 4H_{m-3}) = H_m$

is not an integer sequence

$G = ((8 \cdot 4G) / (8 + 4G))^{(1/4)}$

$(2/G \quad 1.49..)$ $= 1.338213189 75$

$\log_2 = .420307968965$

Ref: $G = (2 + 2G)^{(1/4)}$ Meta-Meantone 10 OCT 97 - E.W.