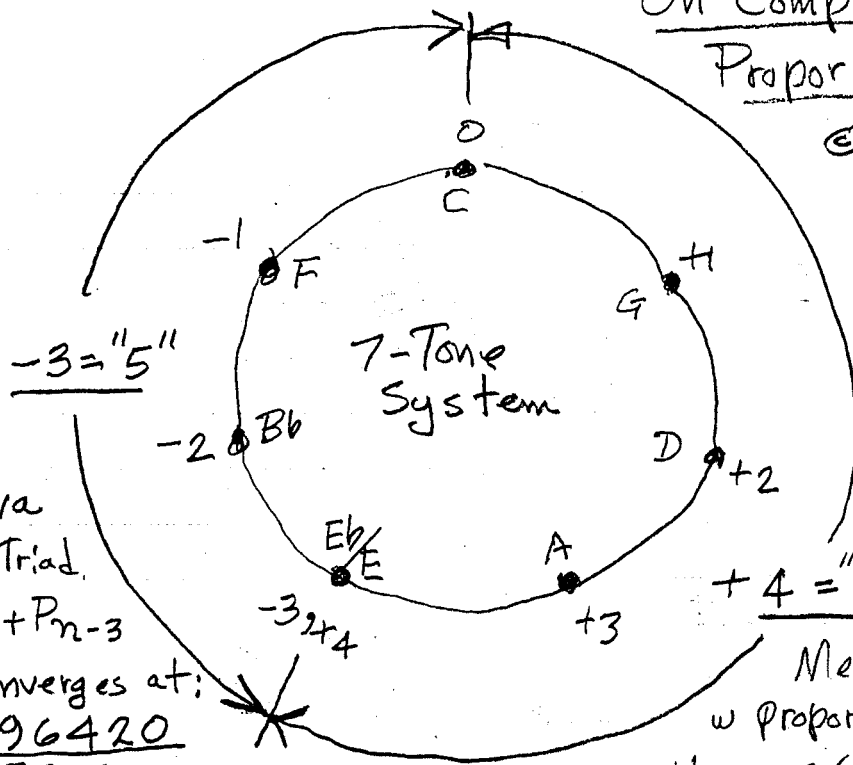


On Complementary Proportional Triads

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Meta-Maliva
w. Proportional Triad.

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

P_n / P_{n-1} converges at:
1.35320996420

$\log_2 .436385705396$

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

Meta-meantone
w. Proportional Triad

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

H_n / H_{n-1} converges at:

1.49453018048

$\log_2 .579692031034$

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

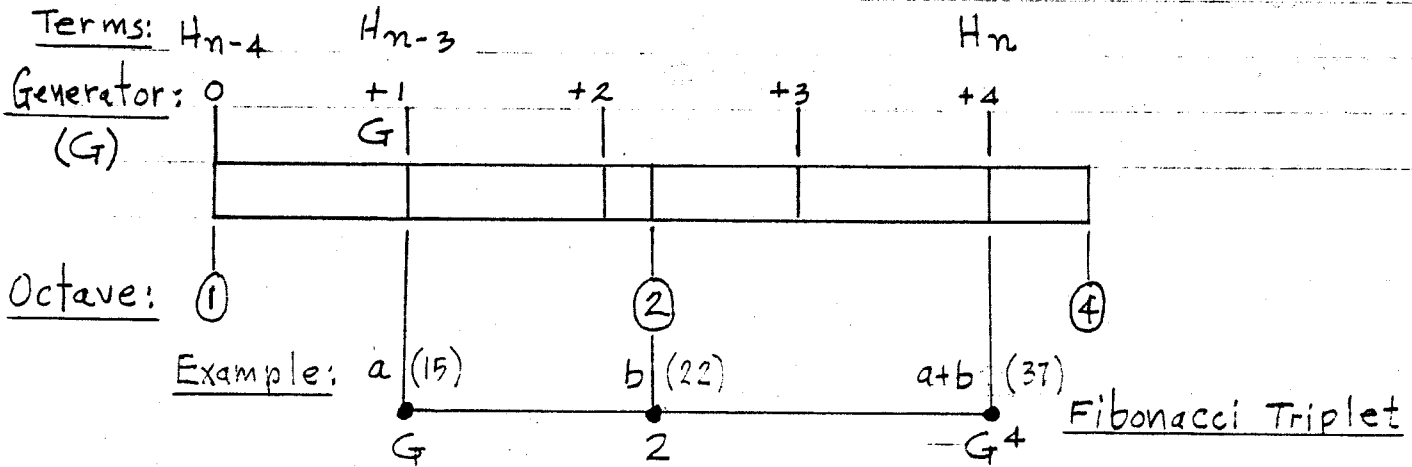


$G = (2 + G)^{(1/4)}$, Meta-Mavila

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10 Oct. 97 - E.W.

(P. 7d)



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-

Re-Seed Example:

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

G Paraphrase:

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

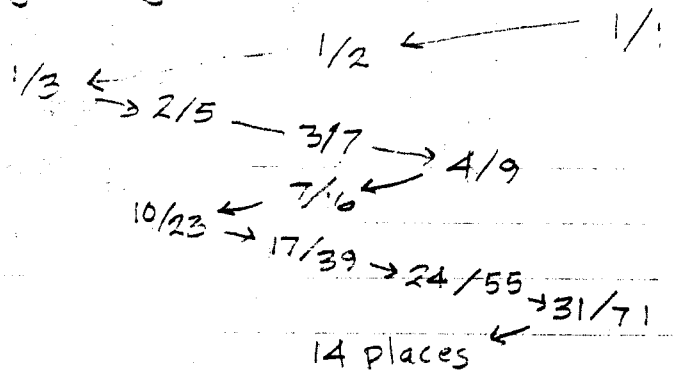
$$= 1.35320996420 \dots$$

$$\log_2 = \underline{\underline{.436385705396}}$$

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

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

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(-3=5) ←

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

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

```

-----
RCL 1
X
2
=
+
RCL 2
=
STO 1,
RCL 2
X
2
=
+
RCL 3
=
STO 2,
RCL 3
X
X
2
=
+
RCL 4
=
STO 3,

```

```

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

```

Converges → 1.35320996420
 \log_2 .436385705396

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

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

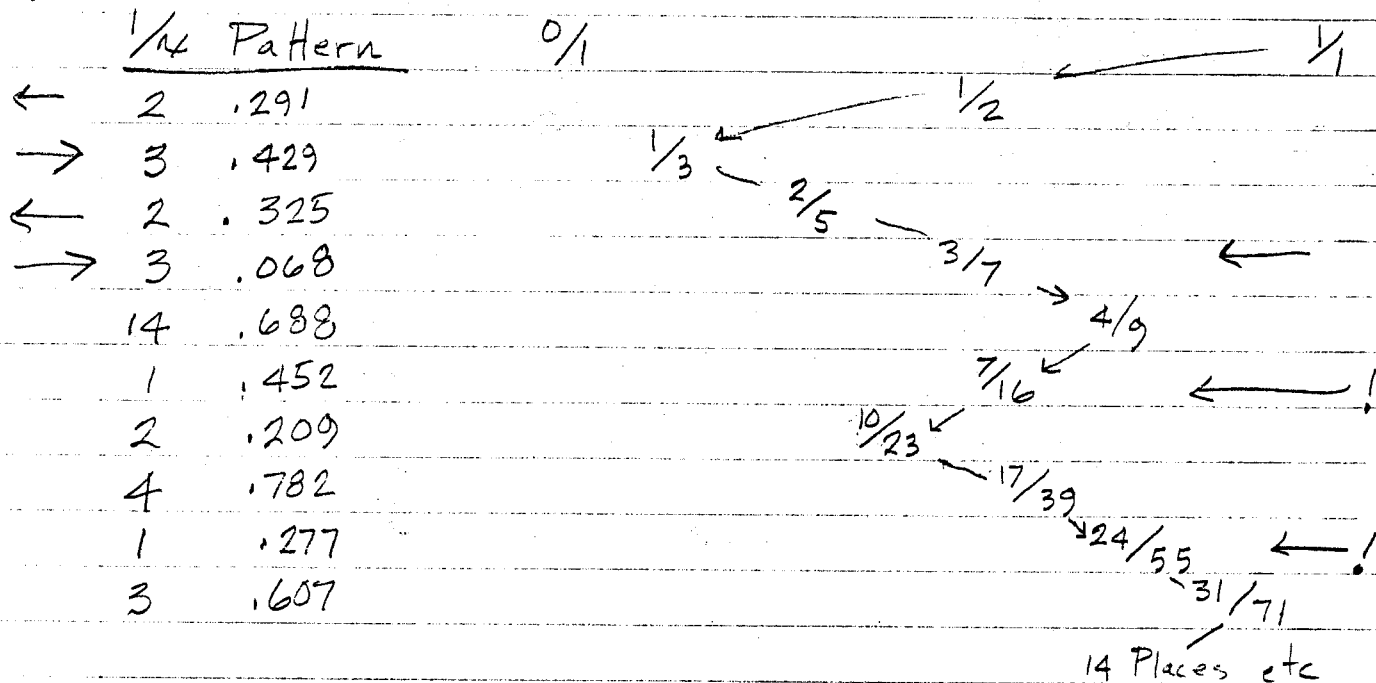
Ref: Chopi Scale from Mavila

⇒ 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

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$\log_2 .436 385 705 396$



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 1.35320996420
 $\log_2 = .436385705396$

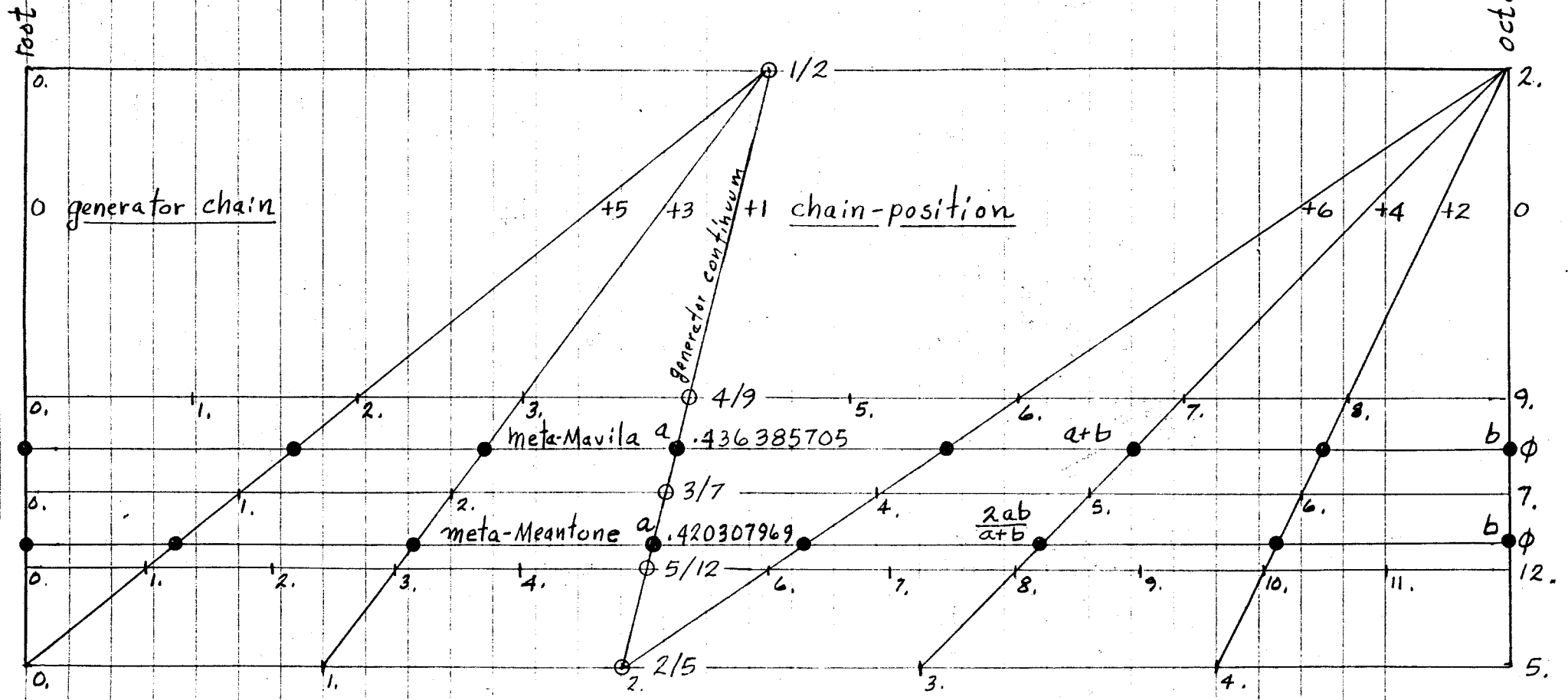
0	① 8, 256			②③
1		⑦ 67, 268		
2			⑭ 559, 279.5	
3	② 4.5, 288			⑫ 4652, 290.75
4	(9)	⑤ 37, 296		
5			⑫ 306, 306	
6				⑰ 2539, 317.375
7		③ 20, 320		
8			⑩ 167, 334	
9				⑰ 1389, 347.25
10	① 11, 352			⑳ 24
11		⑧ 91, 364		
12			⑮ 756, 378	
13	① 6, 384			㉑ 6287, 392.9375
14		⑥ 50, 400		
15			⑬ 415, 415	
16	③ 3.25, 416			㉒ 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%	① 8, 256			㉓

Ref: Chopi scale from Mavila

16OCT97-E.W.

Enantiodromia of Meta-Meantone into Meta-Mavila

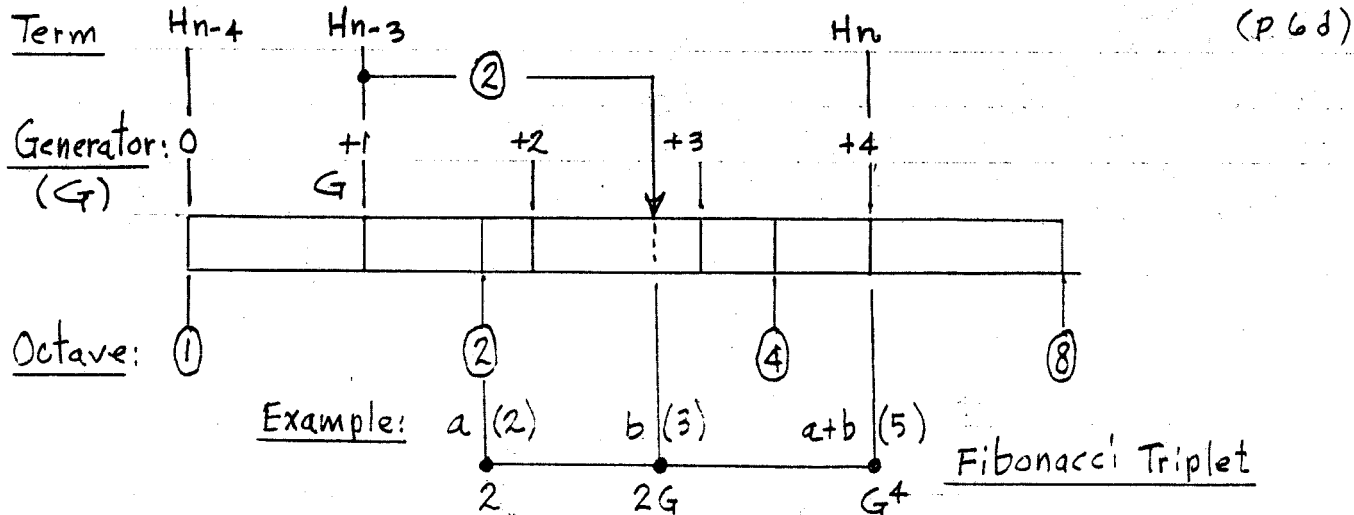
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$G = (2 + 2G)^{1/4}$, Meta-Meantone

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10.OCT.97-EW,



Recurrence Relation:

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

G Paraphrase:

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

$$= \underline{1.49453018048}$$

$$\log_2 = \underline{.579692031034}$$

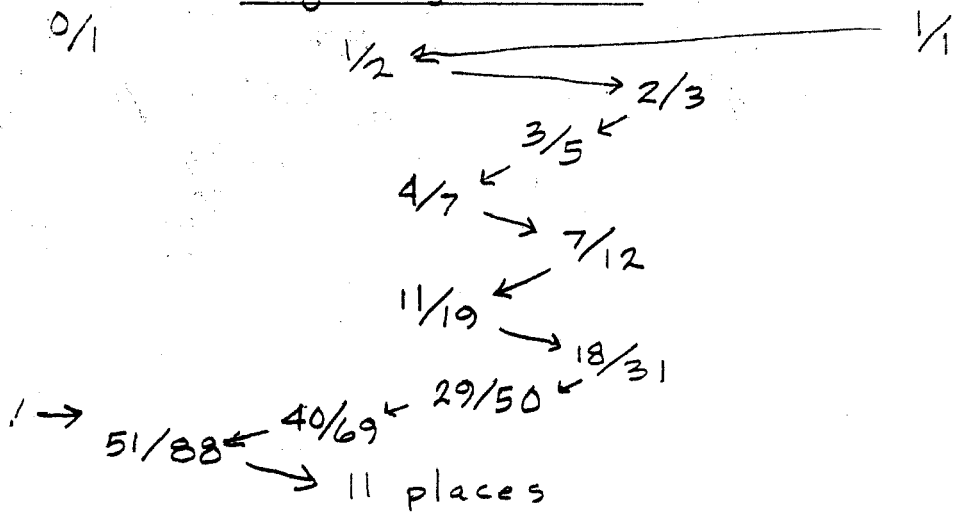
Example re-seed:

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

1/4 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-Mean-tone

© 1993 by Erv Wilson
ref John Harrison's scale
 $\frac{120}{80}$ $\frac{180}{120}$

0	+ 1	+ 2	+ 3	+ 4
	3	4.5	6.75	10.125
$\frac{16}{11}$	$\frac{24}{16}$	$\frac{36}{24}$	$\frac{54}{36}$	$\frac{80}{54}$
$\frac{27}{18}$	$\frac{40}{27}$	$\frac{60}{40}$	$\frac{90}{60}$	$\frac{134}{90}$
				$\frac{200}{134}$
				$\frac{300}{200}$

(A+B) x 2 = E		etc.		E															
A	B	3	5	7	11	16	24	36	54	80	120	180	268	400	600				
1	2.5	(1)	(2)	(3)	(4)	(1,)	(2,)	(3,)	(4,)	(6,)	(7,)								
			(2)	(3)	(4)	(1,)	(2,)	(3,)	(4,)										

Proportional Trials

Converges on 1.49453018048
(see also proportional "4,5,6" 1992)

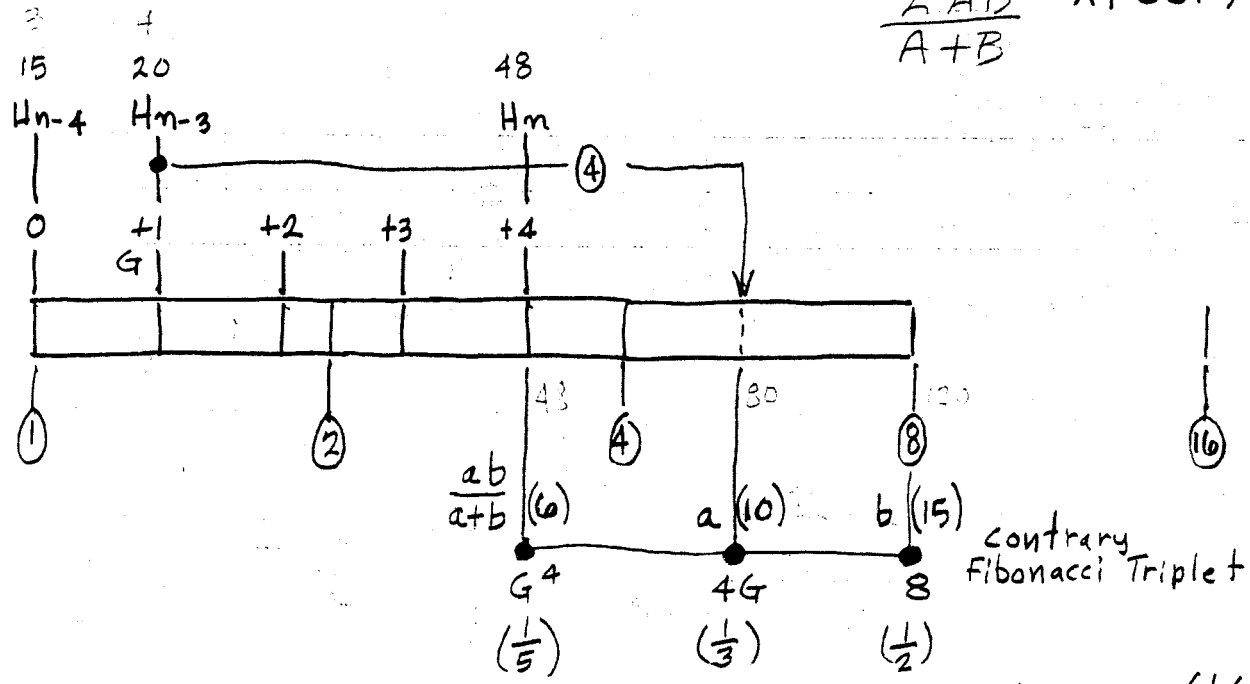
↓ To get a quick convergence

<pre> (RCL 1 + RCL 2) x 2 = STO 1, (RCL 2 + RCL 3) x 2 = STO 2, </pre>	<pre> (RCL 3 + RCL 4) x 2 = STO 3, (RCL 4 + RCL 1,) x 2 = STO 4, ÷ RCL 3, = </pre>	<pre> (RCL 1 + RCL 2) x 2 = STO 1, [÷ RCL 4 = STO 5] (RCL 2 + RCL 3) x 2 ÷ RCL 1 = STO 6 STO 2, </pre>	<pre> (RCL 3 + RCL 4) x 2 = STO 3, [÷ RCL 2, = STO 7] (RCL 4 + RCL 1,) x 2 ÷ RCL 3 = STO 8 STO 4, </pre>
--	--	--	--

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

135 180 240 320 432 579.2
 27 108 144 192 259.2
 405 540 720 960 1296

Study on
Contrary Meta-Mean-tone
 2 AB 24 Oct 97-E.W.
 A+B



$(8H_{m-4} \times 4H_{m-3}) / (8H_{m-4} + 4H_{m-3}) = H_m$
 is not an integer sequence

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

$(\frac{2}{G})^{1.49...} = 1.33821318975$
 $\log_2 = .420307968965$

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