March 12, 1996

Dear John,

I have come across an intriguing correspondence between the Lambdoma and the Farey series (so-called). If the terms of the Lambdoma are presented in their irreducible condition and arranged in pitch sequence; and also if the Farey series is extended from 0/1 to 1/0; ~~then~~ and letting n be the cap placed on the largest integer of both processes; then Farey cap-n and Lambdoma cap-n are equal to each other! That is $\mathcal{F}_n = \mathcal{L}_n$! I will not try to prove it, but I have included some quick and rough sketches with the title So-Called Farey Series, extended 0/1 to 1/0 (Full set of Gear Ratios), and Lambdoma which will show this to be the case. Sheet 1 is my actual worksheet where I came to appreciate this striking but inevitable correspondence. Sheet 2 thru 7 are a progression of examples. I have also included some descriptive pages from the massive The Farey Series of Order 1025 displaying solutions of the Diophantine Equation $bx - ay = 1$ designed and compiled by E.H. Neville, Published for the Royal Society by the University Press, Cambridge, 1950. The Farey Series was preceeded, and read out of earlier tables of Gear Ratios. The science and metaphysics of Gear Ratios I believe goes back a ways — and there may be some historical connect thereby from Lambdoma to Farey series — (altho this would be almost impossible to document). In that case, certain schools of thought might have reduced the terms of the Lambdoma, and ~~were~~ might have been well aware of the rich windfall of Epimoria to be harvested therefrom! — from the Greeks to the Egyptians.

I'm sending a copy of this note on to Barbara Hero, and Carter Scholz.

yours, Erv Wilson, 844 N. Ave 65, Los Angeles CA 90042

This note is written on Kenaf paper

This is How to Convert The Lambdoma to the Farey Series

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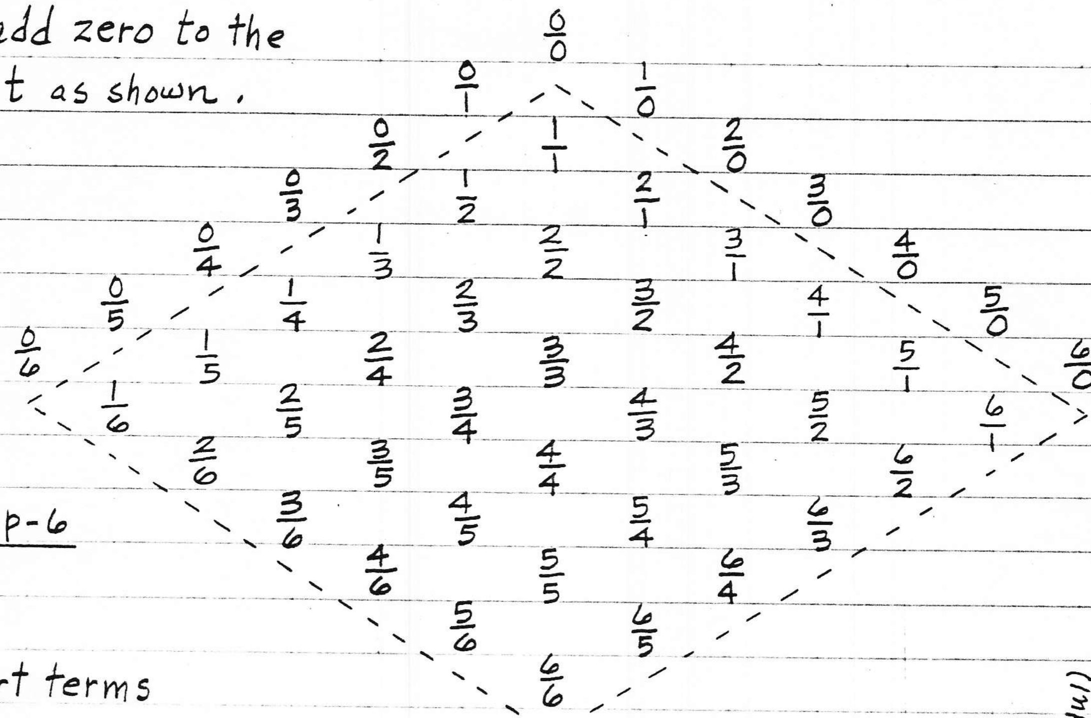
Step 1; add zero to the master set as shown.

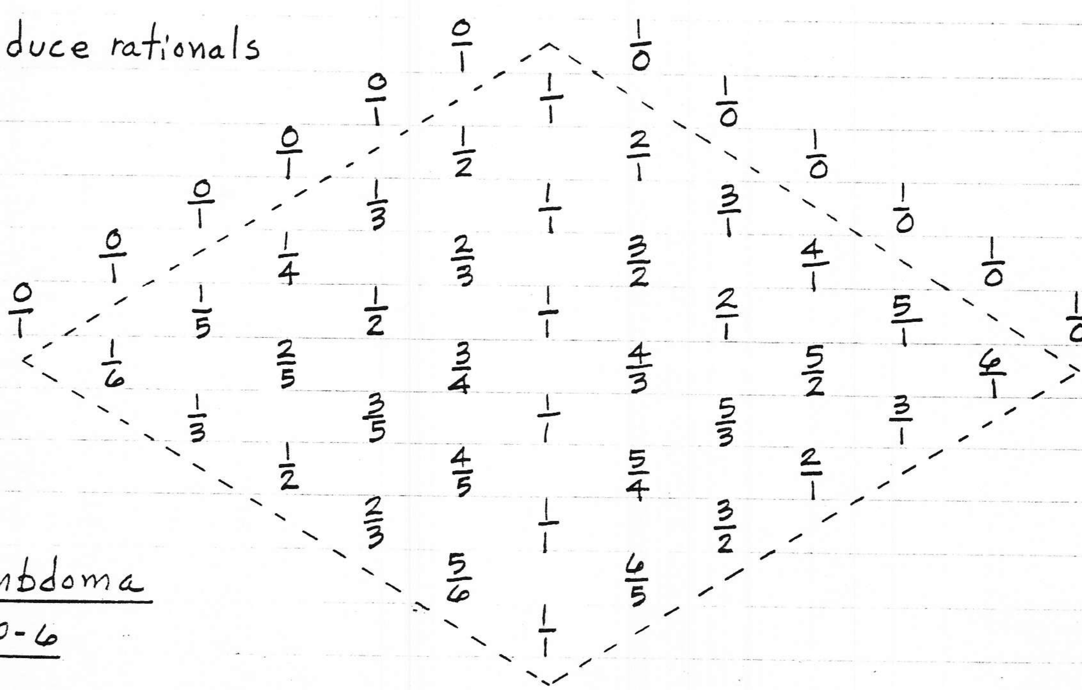


Lambdoma Cap-6

Step 3; sort terms per Magnitude $\frac{a}{b}$

Magnitude $\frac{a}{b}$	(zero)	.17	.20	.25	.33	.40	.50	.66	.67	.75	.80	.83	1.00	1.20	1.25	1.33	1.50	1.67	2.00	2.50	3.00	4.00	5.00	6.00	(Infinity)
Farey Series of Order 6;	0/1	1/6	1/5	1/4	1/3	2/5	1/2	3/5	2/3	3/4	4/5	5/6	1/1	6/5	5/4	4/3	3/2	5/3	2/1	5/2	3/1	4/1	5/1	6/1	1/0
epimoria $\frac{b \times c}{a \times d}$	1/0	6/5	5/4	4/3	6/5	5/4	6/5	10/9	9/8	16/15	25/24	6/5	6/5	25/24	16/15	9/8	10/9	6/5	5/4	6/5	4/3	5/4	6/5	1/0	

Step 2; reduce rationals as shown.

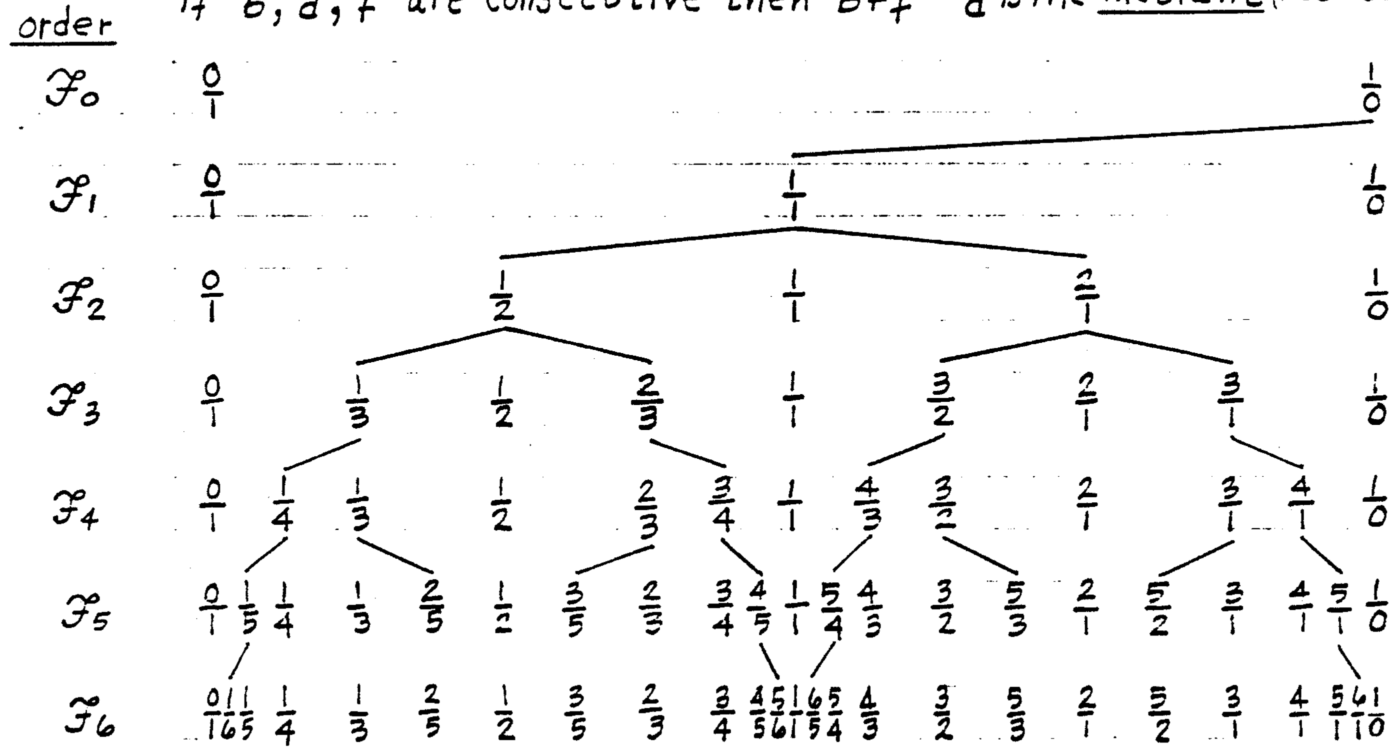


Lambdoma cap-6

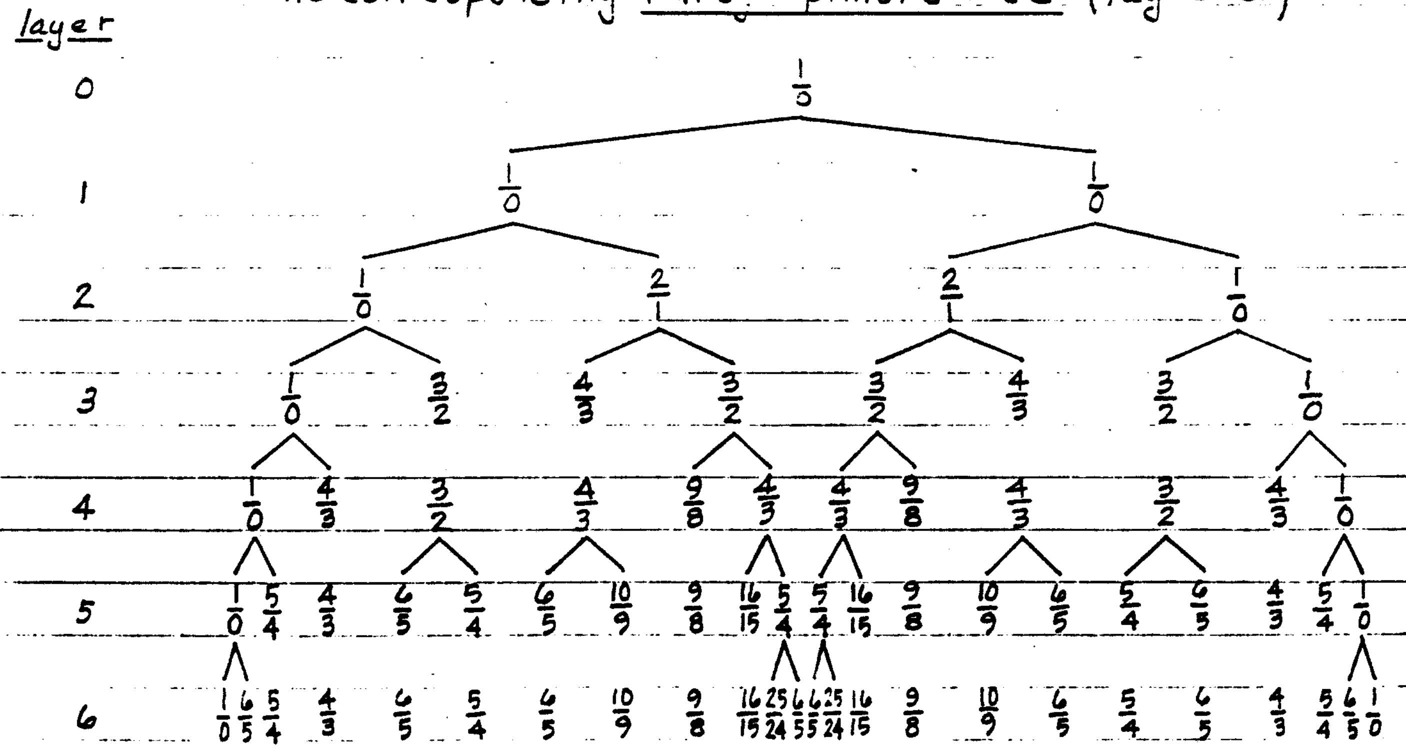
The Farey Series (Lambdoma) is imbedded in the Peirce Series (Scale-Tree).

Farey Mediant Tree thru Order 6, (0/1 to 1/0)

If $\frac{a}{b}, \frac{c}{d}, \frac{e}{f}$ are consecutive then $\frac{a+e}{b+f} = \frac{c}{d}$ is the mediant (reduced).



the corresponding Farey Epimore Tree (lay-over)



If $\frac{a}{b}, \frac{c}{d}$ are consecutive then $bc-ad=1$, and $\frac{bc}{ad}$ is the epimore.
Note; Compare with Lambdoma Cap-6.

Farey / Lambdoma Sequence thru Order 6, (0/1 to 1/0) showing epimoria

Order

$\mathcal{F}_0$: 0/1, 1/0
epimore: 1/0

$\mathcal{F}_1$: 0/1, 1/1, 1/0
epimoria: 1/0, 1/0

$\mathcal{F}_2$: 0/1, 1/2, 1/1, 2/1, 1/0
epimoria: 1/0, 2/1, 2/1, 1/0

$\mathcal{F}_3$: 0/1, 1/3, 1/2, 2/3, 1/1, 3/2, 2/1, 3/1, 1/0
epimoria: 1/0, 3/2, 4/3, 3/2, 3/2, 4/3, 3/2, 1/0

$\mathcal{F}_4$: 0/1, 1/4, 1/3, 1/2, 2/3, 3/4, 1/1, 4/3, 3/2, 2/1, 3/1, 4/1, 1/0
epimoria: 1/0, 4/3, 3/2, 4/3, 9/8, 4/3, 4/3, 9/8, 4/3, 3/2, 4/3, 1/0

$\mathcal{F}_5$: 0/1, 1/5, 1/4, 1/3, 2/5, 1/2, 3/5, 2/3, 3/4, 4/5, 1/1, 5/4, 4/3, 3/2, 5/3, 2/1, 5/2, 3/1, 4/1, 5/1, 1/0
epimoria: 1/0, 5/4, 4/3, 6/5, 5/4, 6/5, 10/9, 9/8, 16/15, 5/4, 5/4, 16/15, 9/8, 10/9, 6/5, 5/4, 6/5, 4/3, 5/4, 1/0

$\mathcal{F}_6$: 0/1, 1/6, 1/5, 1/4, 1/3, 2/5, 1/2, 3/5, 2/3, 3/4, 4/5, 5/6, 1/1, 6/5, 5/4, 4/3, 3/2, 5/3, 2/1, 5/2, 3/1, 4/1, 5/1, 6/1, 1/0
epimoria: 1/0, 6/5, 5/4, 4/3, 6/5, 5/4, 6/5, 10/9, 9/8, 16/15, 25/24, 6/5, 6/5, 25/24, 16/15, 9/8, 10/9, 6/5, 5/4, 6/5, 4/3, 5/4, 6/5, 1/0

<u>Epimore</u>; If $\frac{a}{b}, \frac{c}{d}$ are consecutive then $bc - ad = 1$, and $\frac{bc}{ad}$ is the <u>epimore</u>.
example; $\frac{5}{2}, \frac{3}{1}$ are consecutive so $2 \cdot 3 - 5 \cdot 1 = 1$ and $\frac{2 \cdot 3}{5 \cdot 1}$ as $\frac{6}{5}$ is the <u>epimore</u>.

<u>Mediant</u>; If $\frac{a}{b}, \frac{c}{d}, \frac{e}{f}$ are consecutive then $\frac{a+e}{b+f} = \frac{c}{d}$ is the <u>mediant</u>.
example; $\frac{2}{1}, \frac{5}{2}, \frac{3}{1}$ are consecutive so $\frac{2+3}{1+1} = \frac{5}{2}$ is the <u>mediant</u>

Ref.; <u>The Farey Series of Order 1025</u>, E.H. Neville
University Press, Cambridge, 1950
<u>A Brief History of the Lambdoma</u>, Barbara Hero
Xenharmonikon 16, Autumn 1995

So-Called Farey Series, extended 0/1 to 1/0 (Full Set of Gear Ratios), and Lambdoma

sheet 1. of 20 sheets

 Mar 2, 1996

Ervin M. Wilson

Gear Ratios (so-called Farey Series) shown as a highly specialized subset of the Peirce sequence. Compare w. Lambdoma below.

0/1 . . . . 1/0

1/1

1/2 2/1

1/3 2/3 3/2 3/1

1/4 3/4 4/3 4/1

1/5 2/5 3/5 4/5 5/4 5/3 5/2 5/1

1/6 5/6 6/5 6/1

1/7 2/7 3/7 4/7 5/7 6/7 7/6 7/5 7/4 7/3 7/2 7/1

1/8 3/8 5/8 7/8 8/7 8/5 8/3 8/1

1/9 2/9 4/9 5/9 7/9 8/9 9/8 9/7 9/5 9/4 9/2 9/1

1/10 3/10 7/10 9/10 10/9 10/7 10/3 10/1

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

1/12 5/12 7/12 11/12 12/11 12/7 12/5 12/1

Lambdoma (reduced rationals) March 3, 1996 E.W.

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

Examples:

sort Magnitude $\frac{a}{b}$	(0)	.25	.33	.50	.66	.75	1.00	1.33	1.50	2.00	3.00	4.00	(∞)
Farey_4	$\frac{0}{1}$	$\frac{1}{4}$	$\frac{1}{3}$	$\frac{1}{2}$	$\frac{2}{3}$	$\frac{3}{4}$	$\frac{1}{1}$	$\frac{4}{3}$	$\frac{3}{2}$	$\frac{2}{1}$	$\frac{3}{1}$	$\frac{4}{1}$	$\frac{1}{0}$

epimoria $\frac{b\times c}{a\times d}$: $\frac{1}{0}$ $\frac{4}{3}$ $\frac{3}{2}$ $\frac{4}{3}$ $\frac{9}{8}$ $\frac{4}{3}$ $\frac{4}{3}$ $\frac{9}{8}$ $\frac{4}{3}$ $\frac{3}{2}$ $\frac{4}{3}$ $\frac{1}{0}$ where $\frac{a}{b}\ \frac{c}{d}$ are consecutive

Lambdoma$_4$ ($\mathcal{L}_4$) (reduced)

$\frac{1}{1}$

$\frac{1}{2}$ $\frac{2}{1}$

$\frac{1}{3}$ $\frac{1}{1}$ $\frac{3}{1}$

$\frac{1}{4}$ $\frac{2}{3}$ $\frac{3}{2}$ $\frac{4}{1}$

$\frac{1}{2}$ $\frac{1}{1}$ $\frac{2}{1}$

$\frac{3}{4}$ $\frac{4}{3}$

$\frac{1}{1}$

sort magnitude $\frac{a}{b}$	(0)	.17	.20	.25	.33	.40	.50	.60	.67	.75	.80	.83	1.00	1.20	1.25	1.33	1.50	1.67	2.00	2.50	3.00	4.00	5.00	6.00	(∞)
Farey_6	$\frac{0}{1}$	$\frac{1}{6}$	$\frac{1}{5}$	$\frac{1}{4}$	$\frac{1}{3}$	$\frac{2}{5}$	$\frac{1}{2}$	$\frac{3}{5}$	$\frac{2}{3}$	$\frac{3}{4}$	$\frac{4}{5}$	$\frac{5}{6}$	$\frac{1}{1}$	$\frac{6}{5}$	$\frac{5}{4}$	$\frac{4}{3}$	$\frac{3}{2}$	$\frac{5}{3}$	$\frac{2}{1}$	$\frac{5}{2}$	$\frac{3}{1}$	$\frac{4}{1}$	$\frac{5}{1}$	$\frac{6}{1}$	$\frac{1}{0}$

epimoria: $\frac{b\times c}{a\times d}$ $\frac{1}{0}$ $\frac{6}{5}$ $\frac{5}{4}$ $\frac{4}{3}$ $\frac{6}{5}$ $\frac{5}{4}$ $\frac{6}{5}$ $\frac{10}{9}$ $\frac{9}{8}$ $\frac{16}{15}$ $\frac{25}{24}$ $\frac{6}{5}$ $\frac{6}{5}$ $\frac{25}{24}$ $\frac{16}{15}$ $\frac{9}{8}$ $\frac{10}{9}$ $\frac{6}{5}$ $\frac{5}{4}$ $\frac{6}{5}$ $\frac{4}{3}$ $\frac{5}{4}$ $\frac{6}{5}$ $\frac{1}{0}$

Lambdoma$_6$ ($\mathcal{L}_6$) (reduced terms)

$\frac{1}{1}$

$\frac{1}{2}$ $\frac{2}{1}$

$\frac{1}{3}$ $\frac{1}{1}$ $\frac{3}{1}$

$\frac{1}{4}$ $\frac{2}{3}$ $\frac{3}{2}$ $\frac{4}{1}$

$\frac{1}{5}$ $\frac{1}{2}$ $\frac{1}{1}$ $\frac{2}{1}$ $\frac{5}{1}$

$\frac{1}{6}$ $\frac{2}{5}$ $\frac{3}{4}$ $\frac{4}{3}$ $\frac{5}{2}$ $\frac{6}{1}$

$\frac{1}{3}$ $\frac{3}{5}$ $\frac{1}{1}$ $\frac{5}{3}$ $\frac{3}{1}$

$\frac{1}{2}$ $\frac{4}{5}$ $\frac{5}{4}$ $\frac{2}{1}$

$\frac{2}{3}$ $\frac{1}{1}$ $\frac{3}{2}$

$\frac{5}{6}$ $\frac{6}{5}$

$\frac{1}{1}$

$\mathcal{F}_4$ 0/1   1/4   1/3   1/2   2/3   3/4   1/1   4/3   3/2   2/1   3/1   4/1   1/0

epimoria   1/0   4/3   3/2   4/3   9/8   4/3   4/3   9/8   4/3   3/2   4/3   1/0

Lambdoma_4

			1/1			
		1/2		2/1		
	1/3		1/1		3/1	
1/4		2/3		3/2		4/1
	1/2		1/1		1/2	
		3/4		4/3		
			1/1			

$\mathcal{F}_5$ 0/1   1/5   1/4   1/3   2/5   1/2   3/5   2/3   3/4   4/5   1/1   5/4   4/3   3/2   5/3   2/1   5/2   3/1   4/1   5/1   1/0

epimoria   1/0   5/4   4/3   6/5   5/4   6/5   10/9   9/8   16/15   5/4   5/4   16/15   9/8   10/9   6/5   5/4   6/5   4/3   5/4   1/0

Lambdoma_5

				1/1				
			1/2		2/1			
		1/3		1/1		3/1		
	1/4		2/3		3/2		4/1	
1/5		1/2		1/1		2/1		5/1
	2/5		3/4		4/3		5/2	
		3/5		1/1		5/3		
			4/5		5/4			
				1/1				

$\mathcal{F}_6$ $\frac{0}{1}\ \frac{1}{6}\ \frac{1}{5}\ \frac{1}{4}\ \frac{1}{3}\ \frac{2}{5}\ \frac{1}{2}\ \frac{3}{5}\ \frac{2}{3}\ \frac{3}{4}\ \frac{4}{5}\ \frac{5}{6}\ \frac{1}{1}\ \frac{6}{5}\ \frac{5}{4}\ \frac{4}{3}\ \frac{3}{2}\ \frac{5}{3}\ \frac{2}{1}\ \frac{5}{2}\ \frac{3}{1}\ \frac{4}{1}\ \frac{5}{1}\ \frac{6}{1}\ \frac{1}{0}$

epimoria: $\frac{1}{0}\ \frac{6}{5}\ \frac{5}{4}\ \frac{4}{3}\ \frac{6}{5}\ \frac{5}{4}\ \frac{6}{5}\ \frac{10}{9}\ \frac{9}{8}\ \frac{16}{15}\ \frac{25}{24}\ \frac{6}{5}\ \frac{6}{5}\ \frac{25}{24}\ \frac{16}{15}\ \frac{9}{8}\ \frac{10}{9}\ \frac{6}{5}\ \frac{5}{4}\ \frac{6}{5}\ \frac{4}{3}\ \frac{5}{4}\ \frac{6}{5}\ \frac{1}{0}$

Lambdoma$_6$

$\frac{1}{1}$

$\frac{1}{2}\ \frac{2}{1}$

$\frac{1}{3}\ \frac{1}{1}\ \frac{3}{1}$

$\frac{1}{4}\ \frac{2}{3}\ \frac{3}{2}\ \frac{4}{1}$

$\frac{1}{5}\ \frac{1}{2}\ \frac{1}{1}\ \frac{2}{1}\ \frac{5}{1}$

$\frac{1}{6}\ \frac{2}{5}\ \frac{3}{4}\ \frac{4}{3}\ \frac{5}{2}\ \frac{6}{1}$

$\frac{1}{3}\ \frac{3}{5}\ \frac{1}{1}\ \frac{5}{3}\ \frac{3}{1}$

$\frac{1}{2}\ \frac{4}{5}\ \frac{5}{4}\ \frac{2}{1}$

$\frac{2}{3}\ \frac{1}{1}\ \frac{3}{2}$

$\frac{5}{6}\ \frac{6}{5}$

$\frac{1}{1}$

$\mathcal{F}_7$ $\frac{0}{1}\ \frac{1}{7}\ \frac{1}{6}\ \frac{1}{5}\ \frac{1}{4}\ \frac{2}{7}\ \frac{1}{3}\ \frac{2}{5}\ \frac{3}{7}\ \frac{1}{2}\ \frac{4}{7}\ \frac{3}{5}\ \frac{2}{3}\ \frac{5}{7}\ \frac{3}{4}\ \frac{4}{5}\ \frac{5}{6}\ \frac{6}{7}\ \frac{1}{1}\ \frac{7}{6}\ \frac{6}{5}\ \frac{5}{4}\ \frac{4}{3}\ \frac{7}{5}\ \frac{3}{2}\ \frac{5}{3}\ \frac{7}{4}\ \frac{2}{1}\ \frac{7}{3}\ \frac{5}{2}\ \frac{3}{1}\ \frac{7}{2}\ \frac{4}{1}\ \frac{5}{1}\ \frac{6}{1}\ \frac{7}{1}\ \frac{1}{0}$

epimoria: $\frac{1}{0}\ \frac{7}{6}\ \frac{6}{5}\ \frac{5}{4}\ \frac{8}{7}\ \frac{7}{6}\ \frac{6}{5}\ \frac{15}{14}\ \frac{7}{6}\ \frac{8}{7}\ \frac{21}{20}\ \frac{10}{9}\ \frac{15}{14}\ \frac{21}{20}\ \frac{16}{15}\ \frac{25}{24}\ \frac{36}{35}\ \frac{7}{6}\ \frac{7}{6}\ \frac{36}{35}\ \frac{25}{24}\ \frac{16}{15}\ \frac{21}{20}\ \frac{15}{14}\ \frac{10}{9}\ \frac{21}{20}\ \frac{8}{7}\ \frac{7}{6}\ \frac{15}{14}\ \frac{6}{5}\ \frac{7}{6}\ \frac{8}{7}\ \frac{5}{4}\ \frac{6}{5}\ \frac{7}{6}\ \frac{1}{0}$

Lambdoma$_7$

$\frac{1}{1}$

$\frac{1}{2}\ \frac{2}{1}$

$\frac{1}{3}\ \frac{1}{1}\ \frac{3}{1}$

$\frac{1}{4}\ \frac{2}{3}\ \frac{3}{2}\ \frac{4}{1}$

$\frac{1}{5}\ \frac{1}{2}\ \frac{1}{1}\ \frac{2}{1}\ \frac{5}{1}$

$\frac{1}{6}\ \frac{2}{5}\ \frac{3}{4}\ \frac{4}{3}\ \frac{5}{2}\ \frac{6}{1}$

$\frac{1}{7}\ \frac{1}{3}\ \frac{3}{5}\ \frac{1}{1}\ \frac{5}{3}\ \frac{3}{1}\ \frac{7}{1}$

$\frac{2}{7}\ \frac{1}{2}\ \frac{4}{5}\ \frac{5}{4}\ \frac{2}{1}\ \frac{7}{2}$

$\frac{3}{7}\ \frac{2}{3}\ \frac{1}{1}\ \frac{3}{2}\ \frac{7}{3}$

$\frac{4}{7}\ \frac{5}{6}\ \frac{6}{5}\ \frac{7}{4}$

$\frac{5}{7}\ \frac{1}{1}\ \frac{7}{5}$

$\frac{6}{7}\ \frac{7}{6}$

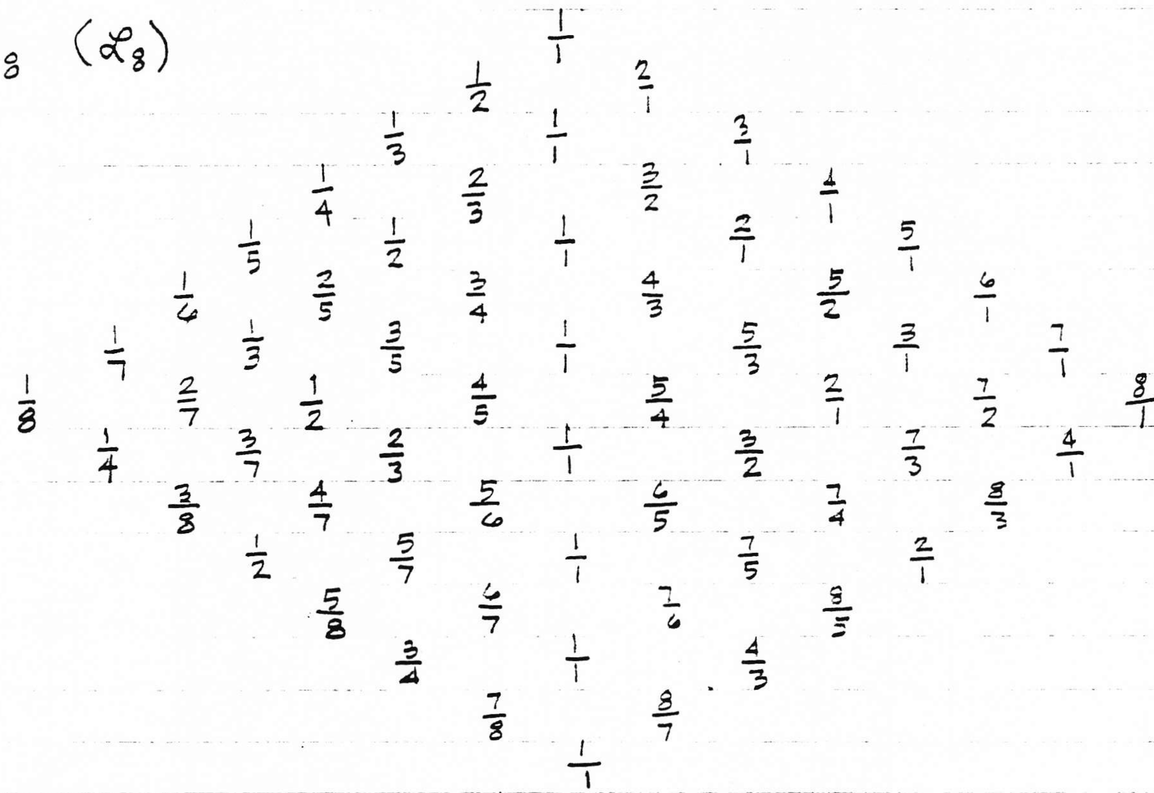
$\frac{1}{1}$

Farey$_8$ ($\mathcal{F}_8$)

0/1	1/8	1/7	1/6	1/5	1/4	2/7	1/3	3/8	2/5	3/7	1/2	4/7	3/5	5/8	2/3	5/7	3/4	4/5	5/6	6/7	7/8	1/1	8/7	7/6	6/5	5/4	4/3	7/5	3/2	8/5	5/3	7/4	2/1	7/3	5/2	8/3	3/1	7/2	4/1	5/1	6/1	7/1	8/1	1/0

epimoria: 1/0, 8/7, 7/6, 6/5, 5/4, 8/7, 7/6, 9/8, 16/15, 15/14, 7/6, 8/7, 21/20, 25/24, 16/15, 15/14, 21/20, 16/15, 25/24, 36/35, 49/48, 8/7, 8/7, 49/48, 36/35, 25/24, 16/15, 21/20, 15/14, 16/15, 25/24, 21/20, 8/7, 7/6, 15/14, 16/15, 9/8, 7/6, 8/7, 5/4, 6/5, 7/6, 8/7, 1/0

Lambdoma$_8$ ($\mathcal{L}_8$)



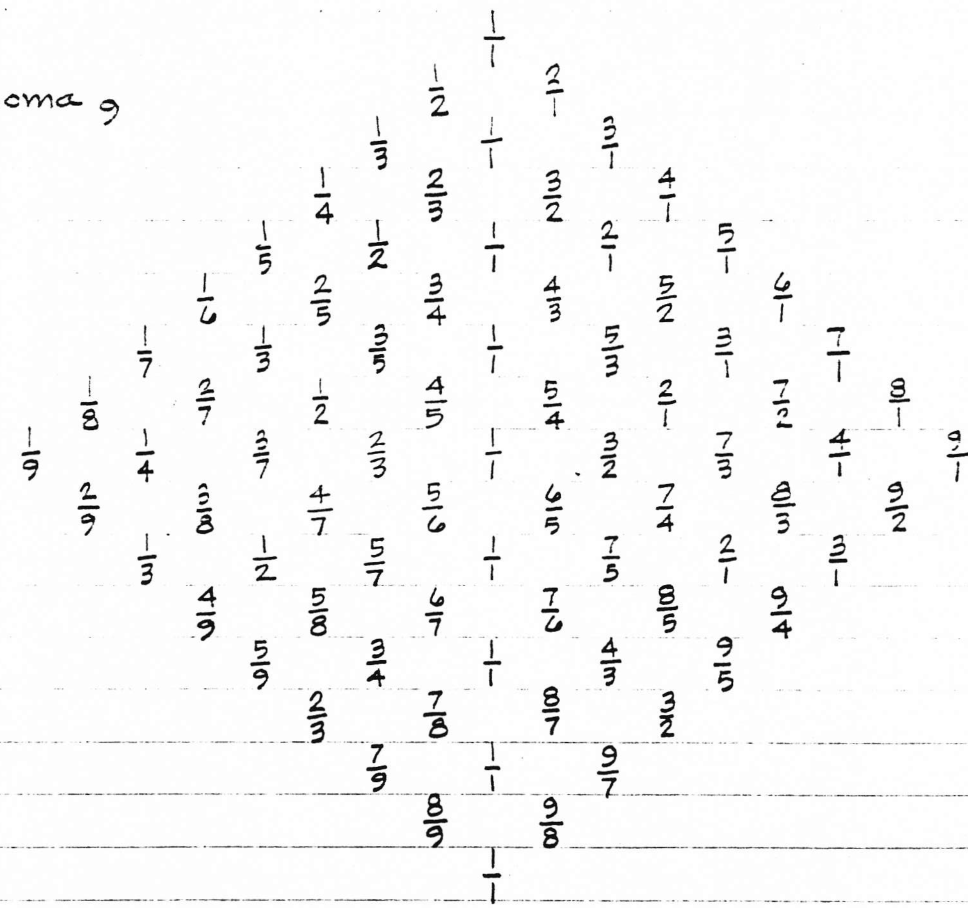
$\mathcal{F}_9$ start $\frac{0}{1}\ \frac{1}{9}\ \frac{1}{8}\ \frac{1}{7}\ \frac{1}{6}\ \frac{1}{5}\ \frac{2}{9}\ \frac{1}{4}\ \frac{2}{7}\ \frac{1}{3}\ \frac{3}{8}\ \frac{2}{5}\ \frac{3}{7}\ \frac{4}{9}\ \frac{1}{2}\ \frac{5}{9}\ \frac{4}{7}\ \frac{3}{5}\ \frac{5}{8}\ \frac{2}{3}\ \frac{5}{7}\ \frac{3}{4}\ \frac{7}{9}\ \frac{4}{5}\ \frac{5}{6}\ \frac{6}{7}\ \frac{7}{8}\ \frac{8}{9}\ \frac{1}{1}$

epimoria: 1/0 9/8 8/7 7/6 6/5 10/9 9/8 8/7 7/6 9/8 16/15 15/14 28/27 9/8 10/9 36/35 21/20 25/24 16/15 15/14 21/20 28/27 36/35 25/24 36/35 49/48 64/63 9/8

cont. $\left(\frac{1}{1}\right)\frac{9}{8}\ \frac{8}{7}\ \frac{7}{6}\ \frac{6}{5}\ \frac{5}{4}\ \frac{9}{7}\ \frac{4}{3}\ \frac{7}{5}\ \frac{3}{2}\ \frac{8}{5}\ \frac{5}{3}\ \frac{7}{4}\ \frac{9}{5}\ \frac{2}{1}\ \frac{9}{4}\ \frac{7}{3}\ \frac{5}{2}\ \frac{8}{3}\ \frac{3}{1}\ \frac{7}{2}\ \frac{4}{1}\ \frac{9}{2}\ \frac{5}{1}\ \frac{6}{1}\ \frac{7}{1}\ \frac{8}{1}\ \frac{9}{1}\ \frac{1}{0}$ end

9/8 64/63 49/48 36/35 25/24 36/35 28/27 21/20 15/14 16/15 25/24 21/20 36/35 10/9 9/8 28/27 15/14 16/15 9/8 7/6 8/7 9/8 10/9 6/5 7/6 8/7 9/8 1/0

Lambdoma 9



Farey$_{10}$ ($\mathcal{F}_{10}$)

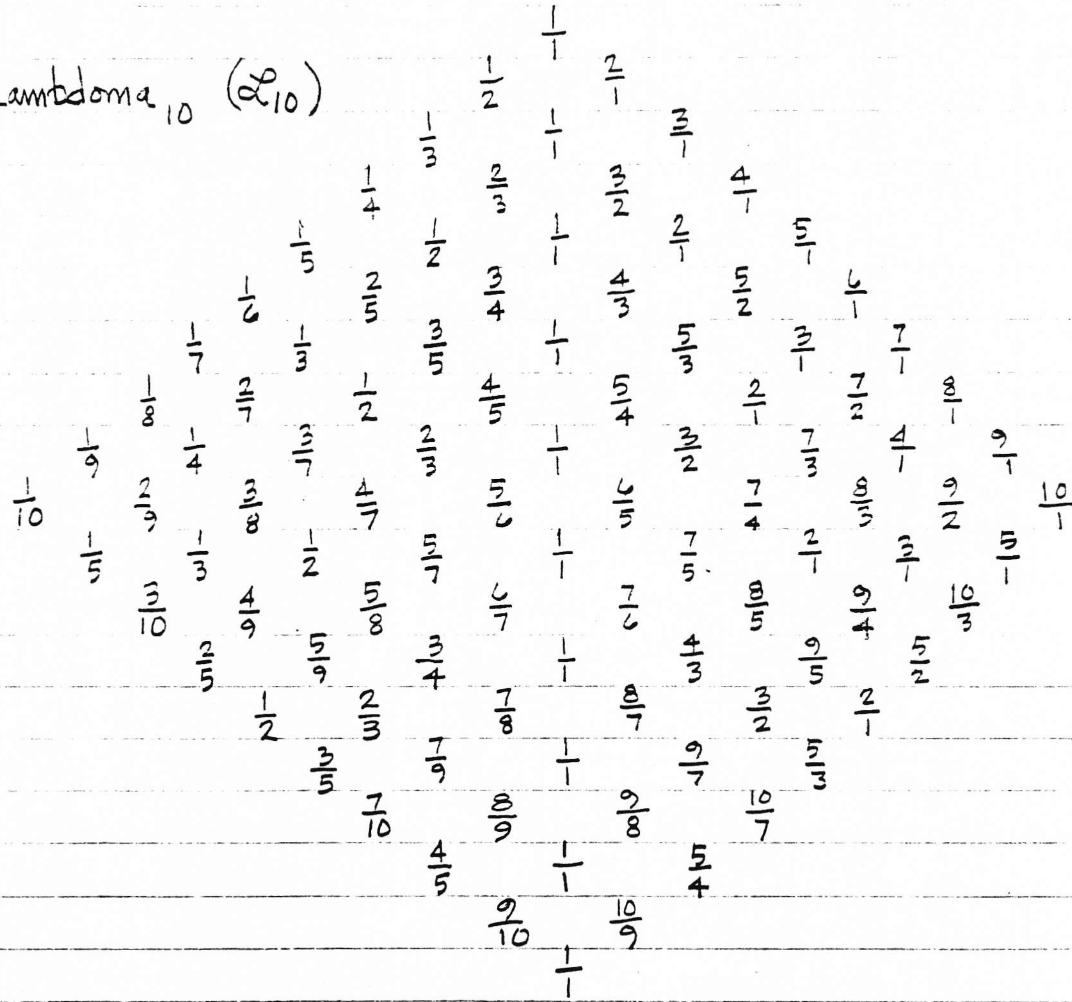
0/1 1/10 1/9 1/8 1/7 1/6 1/5 2/9 1/4 2/7 3/10 1/3 3/8 2/5 3/7 4/9 1/2 5/9 4/7 3/5 5/8 2/3 7/10 5/7 3/4 7/9 4/5 5/6 6/7 7/8 8/9 9/10 1/1

1/0 10/9 9/8 8/7 7/6 6/5 10/9 9/8 8/7 21/20 10/9 9/8 16/15 15/14 28/27 9/8 10/9 36/35 21/20 25/24 16/15 21/20 50/49 21/20 28/27 36/35 25/24 36/35 49/48 64/63 81/80 10/9

(Continued from above) (1/1) 10/9 9/8 8/7 7/6 6/5 5/4 9/7 4/3 7/5 10/7 3/2 8/5 5/3 7/4 9/5 2/1 9/4 7/3 5/2 8/3 3/1 10/3 7/2 4/1 9/2 5/1 6/1 7/1 8/1 9/1 10/1 1/0

10/9 81/80 64/63 49/48 36/35 25/24 36/35 28/27 21/20 50/49 21/20 16/15 25/24 21/20 36/35 10/9 9/8 28/27 15/14 16/15 9/8 10/9 21/20 8/7 9/8 10/9 6/5 7/6 8/7 9/8 10/9 1/0

Lambdoma$_{10}$ ($\mathcal{L}_{10}$)



$\mathfrak{F}_{11}$: 0/1 1/11 1/10 1/9 1/8 1/7 1/6 2/11 1/5 2/9 1/4 3/11 2/7 3/10 1/3 4/11 3/8 2/5 3/7 4/9 5/11 1/2 6/11 5/9 4/7 3/5 5/8 7/11 2/3 7/10 5/7 8/11 3/4 7/9 4/5 9/11 5/6 6/7 7/8 8/9 9/10 10/11 1/1

epimoria: 1/0 11/10 10/9 9/8 8/7 7/6 12/11 11/10 10/9 9/8 12/11 22/21 21/20 10/9 12/11 33/32 16/15 15/14 28/27 45/44 11/10 12/11 55/54 36/35 21/20 25/24 56/55 22/21 21/20 50/49 56/55 33/32 28/27 36/35 45/44 55/54 36/35 49/48 64/63 81/80 100/99 11/10

cont.: (1/1) 11/10 10/9 9/8 8/7 7/6 6/5 11/9 5/4 9/7 4/3 11/8 7/5 10/7 3/2 11/7 8/5 5/3 7/4 9/5 11/6 2/1 11/5 9/4 7/3 5/2 8/3 11/4 3/1 10/3 7/2 11/3 4/1 9/2 5/1 11/2 6/1 7/1 8/1 9/1 10/1 11/1 1/0

11/10 100/99 81/80 64/63 49/48 36/35 55/54 45/44 36/35 28/27 33/32 56/55 50/49 21/20 22/21 56/55 25/24 21/20 36/35 55/54 12/11 11/10 45/44 28/27 15/14 16/15 33/32 12/11 10/9 21/20 22/21 12/11 9/8 10/9 11/10 12/11 7/6 8/7 9/8 10/9 11/10 1/0

Lambdoma$_{11}$

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

Farey$_{12}$ ($\mathcal{F}_{12}$)

Farey$_{12}$: 0/1 1/12 1/11 1/10 1/9 1/8 1/7 1/6 2/11 1/5 2/9 1/4 3/11 2/7 3/10 1/3 4/11 3/8 2/5 5/12 3/7 4/9 5/11 1/2 6/11 5/9 4/7 7/12 3/5 5/8 7/11 2/3 7/10 5/7 8/11 3/4 7/9 4/5 5/6 6/7 7/8 8/9 9/10 10/11 11/12 1/1

epimoria: 1/0 12/11 11/10 10/9 9/8 8/7 7/6 12/11 11/10 10/9 9/8 12/11 22/21 21/20 10/9 12/11 33/32 16/15 25/24 36/35 28/27 45/44 11/10 12/11 55/54 36/35 49/48 36/35 25/24 56/55 22/21 21/20 50/49 56/55 33/32 28/27 36/35 45/44 55/54 36/35 49/48 64/63 81/80 100/99 121/120 12/11

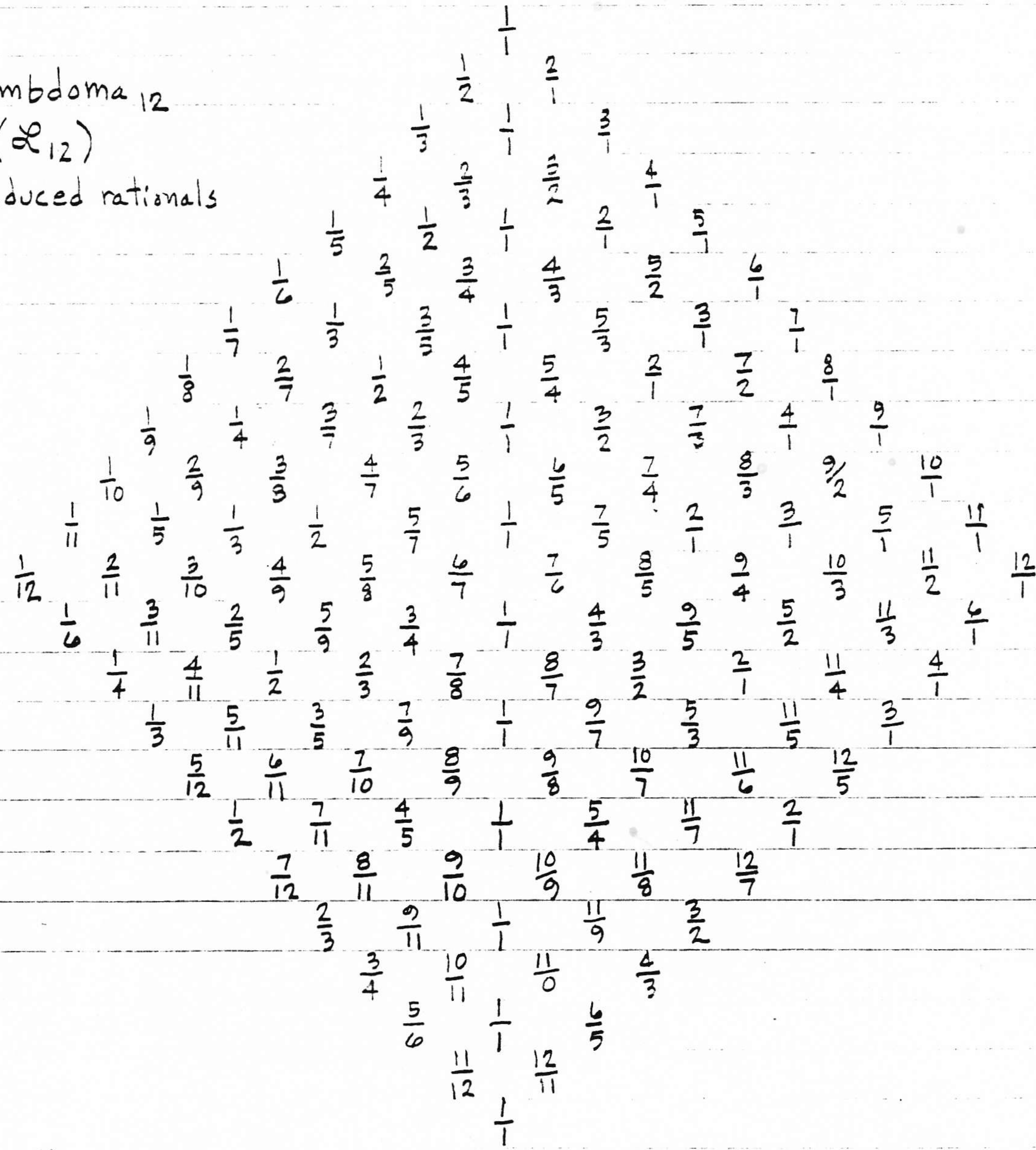
← cont.

Farey$_{12}$: (1/1) 12/11 11/10 10/9 9/8 8/7 7/6 6/5 11/9 5/4 9/7 4/3 11/8 7/5 10/7 3/2 11/7 8/5 5/3 12/7 7/4 9/5 11/6 2/1 11/5 9/4 7/3 12/5 5/2 8/3 11/4 3/1 10/3 7/2 11/3 4/1 9/2 5/1 11/2 6/1 7/1 8/1 9/1 10/1 11/1 12/1 1/0

epimoria: 12/11 121/120 100/99 81/80 64/63 49/48 36/35 55/54 45/44 36/35 28/27 33/32 56/55 50/49 21/20 22/21 56/55 25/24 36/35 49/48 36/35 55/54 12/11 11/10 45/44 28/27 36/35 25/24 16/15 33/32 12/11 10/9 21/20 22/21 12/11 9/8 10/9 11/10 12/11 7/6 8/7 9/8 10/9 11/10 12/11 1/0

Lambdoma$_{12}$ ($\mathcal{L}_{12}$)

reduced rationals



The Farey Series of Order 13, (0/1 to 1/0)
Showing Epimoria
(compare with Lambdoma Cap-13)

$\mathcal{F}_{13}$	epimoria	cont.		cont.		end	
1/2		1/1		2/1		1/0	
	13/12		13/12		14/13		1/0
6/13		12/13		13/7		13/1	
	66/65		144/143		78/77		13/12
5/11		11/12		11/6		12/1	
	45/44		121/120		55/54		12/11
4/9		10/11		9/5		11/1	
	28/27		100/99		36/35		11/10
3/7		9/10		7/4		10/1	
	36/35		81/80		49/48		10/9
5/12		8/9		12/7		9/1	
	25/24		64/63		36/35		9/8
2/5		7/8		5/3		8/1	
	26/25		49/48		40/39		8/7
5/13		6/7		13/8		7/1	
	40/39		78/77		65/64		14/13
3/8		11/13		8/5		13/2	
	33/32		66/65		56/55		13/12
4/11		5/6		11/7		6/1	
	12/11		55/54		22/21		12/11
1/3		9/11		3/2		11/2	
	13/12		45/44		27/26		11/10
4/13		4/5		13/9		5/1	
	40/39		36/35		91/90		10/9
3/10		7/9		10/7		9/2	
	21/20		91/90		50/49		27/26
2/7		10/13		7/5		13/3	
	22/21		40/39		56/55		13/12
3/11		3/4		11/8		4/1	
	12/11		33/32		33/32		12/11
1/4		8/11		4/3		11/3	
	13/12		56/55		40/39		22/21
3/13		5/7		13/10		7/2	
	27/26		50/49		91/90		21/20
2/9		7/10		9/7		10/3	
	10/9		91/90		36/35		40/39
1/5		9/13		5/4		13/4	
	11/10		27/26		45/44		13/12
2/11		2/3		11/9		3/1	
	12/11		22/21		55/54		12/11
1/6		7/11		6/5		11/4	
	13/12		56/55		66/65		33/32
2/13		5/8		13/11		8/3	
	14/13		65/64		78/77		40/39
1/7		8/13		7/6		13/5	
	8/7		40/39		49/48		26/25
1/8		3/5		8/7		5/2	
	9/8		36/35		64/63		25/24
1/9		7/12		9/8		12/5	
	10/9		49/48		81/80		36/35
1/10		4/7		10/9		7/3	
	11/10		36/35		100/99		28/27
1/11		5/9		11/10		9/4	
	12/11		55/54		121/120		45/44
1/12		6/11		12/11		11/5	
	13/12		78/77		144/143		66/65
1/13		7/13		13/12		13/6	
	1/0		14/13		13/12		13/12
0/1		(1/2)		(1/1)		(2/1)	
start							

Start	$\mathcal{F}_{14}$	epimore
	0/1	
		1/0
	1/14	
		14/13
	1/13	
		13/12
	1/12	
		12/11
	1/11	
		11/10
	1/10	
		10/9
	1/9	
		9/8
	1/8	
		8/7
	1/7	
		14/13
	2/13	
		13/12
	1/6	
		12/11
	2/11	
		11/10
	1/5	
		15/14
	3/14	
		28/27
	2/9	
		27/26
	3/13	
		13/12
	1/4	
		12/11
	3/11	
		22/21
	2/7	
		21/20
	3/10	
		40/39
	4/13	
		13/12
	1/3	
		15/14
	5/14	
		56/55
	4/11	
		33/32
	3/8	
		40/39
	5/13	
		26/25
	2/5	
		25/24
	5/12	
		36/35
	3/7	
		28/27
	4/9	
		45/44
	5/11	
		66/65
	6/13	
		13/12
	1/2	

	Fraction	epimore
	(1/2)	
		14/13
	7/13	
		78/77
	6/11	
		55/54
	5/9	
		36/35
	4/7	
		49/48
	7/12	
		36/35
	3/5	
		40/39
	8/13	
		65/64
	5/8	
		56/55
	7/11	
		99/98
	9/14	
		28/27
	2/3	
		27/26
	9/13	
		91/90
	7/10	
		50/49
	5/7	
		56/55
	8/11	
		33/32
	3/4	
		40/39
	10/13	
		91/90
	7/9	
		99/98
	11/14	
		56/55
	4/5	
		45/44
	9/11	
		55/54
	5/6	
		66/65
	11/13	
		78/77
	6/7	
		49/48
	7/8	
		64/63
	8/9	
		81/80
	9/10	
		100/99
	10/11	
		121/120
	11/12	
		144/143
	12/13	
		169/168
	13/14	
		14/13
cont.	1/1	

	Fraction	epimore
	(1/1)	
		14/13
	14/13	
		169/168
	13/12	
		144/143
	12/11	
		121/120
	11/10	
		100/99
	10/9	
		81/80
	9/8	
		64/63
	8/7	
		49/48
	7/6	
		78/77
	13/11	
		66/65
	6/5	
		55/54
	11/9	
		45/44
	5/4	
		56/55
	14/11	
		99/98
	9/7	
		91/90
	13/10	
		40/39
	4/3	
		33/32
	11/8	
		56/55
	7/5	
		50/49
	10/7	
		91/90
	13/9	
		27/26
	3/2	
		28/27
	14/9	
		99/98
	11/7	
		56/55
	8/5	
		65/64
	13/8	
		40/39
	5/3	
		36/35
	12/7	
		49/48
	7/4	
		36/35
	9/5	
		55/54
	11/6	
		78/77
	13/7	
		14/13
cont.	2/1	

	Fraction	epimore
	(2/1)	
		13/12
	13/6	
		66/65
	11/5	
		45/44
	9/4	
		28/27
	7/3	
		36/35
	12/5	
		25/24
	5/2	
		26/25
	13/5	
		40/39
	8/3	
		33/32
	11/4	
		56/55
	14/5	
		15/14
	3/1	
		13/12
	13/4	
		40/39
	10/3	
		21/20
	7/2	
		22/21
	11/3	
		12/11
	4/1	
		13/12
	13/3	
		27/26
	9/2	
		28/27
	14/3	
		15/14
	5/1	
		11/10
	11/2	
		12/11
	6/1	
		13/12
	13/2	
		14/13
	7/1	
		8/7
	8/1	
		9/8
	9/1	
		10/9
	10/1	
		11/10
	11/1	
		12/11
	12/1	
		13/12
	13/1	
		14/13
	14/1	
		1/0
end	1/0	

Farey Series of Order 14, (0/1 to 1/0)
Showing Epimoria
(Compare with Lambdoma Cap-14)

Start

0/1 1/15 1/14 1/13 1/12 1/11 1/10 1/9 1/8 2/15 1/7 2/13 1/6 2/11 1/5 3/14 2/9 3/13 1/4 4/15 3/11 2/7 3/10 4/13 1/3 5/14 4/11 3/8 5/13 2/5 5/12 3/7 4/9 5/11 6/13 7/15 1/2 $\mathcal{F}_{15}$

epimore: 1/0 15/14 14/13 13/12 12/11 11/10 10/9 9/8 16/15 15/14 14/13 13/12 12/11 11/10 15/14 28/27 27/26 13/12 16/15 45/44 22/21 21/20 40/39 13/12 15/14 56/55 33/32 40/39 26/25 25/24 36/35 28/27 45/44 66/65 91/90 15/14

(1/2) 8/15 7/13 6/11 5/9 4/7 7/12 3/5 8/13 5/8 7/11 9/14 2/3 9/13 7/10 5/7 8/11 11/15 3/4 10/13 7/9 11/14 4/5 9/11 5/6 11/13 6/7 13/15 7/8 8/9 9/10 10/11 11/12 12/13 13/14 14/15 1/1 cont.

16/15 105/104 78/77 55/54 36/35 49/48 36/35 40/39 65/64 56/55 99/98 28/27 27/26 91/90 50/49 56/55 121/120 45/44 40/39 91/90 99/98 56/55 45/44 55/54 66/65 78/77 91/90 105/104 64/63 81/80 100/99 121/120 144/143 169/168 196/195 15/14

(1/1) 15/14 14/13 13/12 12/11 11/10 10/9 9/8 8/7 15/13 7/6 13/11 6/5 11/9 5/4 14/11 9/7 13/10 4/3 15/11 11/8 7/5 10/7 13/9 3/2 14/9 11/7 8/5 13/8 5/3 12/7 7/4 9/5 11/6 13/7 15/8 2/1 cont.

15/14 196/195 169/168 144/143 121/120 100/99 81/80 64/63 105/104 91/90 78/77 66/65 55/54 45/44 56/55 99/98 91/90 40/39 45/44 121/120 56/55 50/49 91/90 27/26 28/27 99/98 56/55 65/64 40/39 36/35 49/48 36/35 55/54 78/77 105/104 16/15

(2/1) 15/7 13/6 11/5 9/4 7/3 12/5 5/2 13/5 8/3 11/4 14/5 3/1 13/4 10/3 7/2 11/3 15/4 4/1 13/3 9/2 14/3 5/1 11/2 6/1 13/2 7/1 15/2 8/1 9/1 10/1 11/1 12/1 13/1 14/1 15/1 1/0 end

15/14 91/90 66/65 45/44 28/27 36/35 25/24 26/25 40/39 33/32 56/55 15/14 13/12 40/39 21/20 22/21 45/44 16/15 13/12 27/26 28/27 15/14 11/10 12/11 13/12 14/13 15/14 16/15 9/8 10/9 11/10 12/11 13/12 14/3 15/14 1/0

The Farey Series of Order 15, (0/1 to 1/0)
Showing the Epimoria
(Compare with Lambdoma Cap-15)

×

16-Cap Lambdoma ($\mathcal{L}_{16}$)

w. reduced rationals

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

Compare with Farey Series order 16 ($\mathcal{F}_{16}$)

start 0/1 1/16 1/15 1/14 1/13 1/12 1/11 1/10 1/9 1/8 2/15 1/7 2/13 1/6 2/11 3/16 1/5 3/14 2/9 3/13 1/4 4/15 3/11 2/7 3/10 4/13 5/16 1/3 5/14 4/11 3/8 5/13 2/5 5/12 3/7 7/16 4/9 5/11 6/13 7/15 1/2 $\mathfrak{F}_{16}$

epimore: 1/0 16/15 15/14 14/13 13/12 12/11 11/10 10/9 9/8 16/15 15/14 14/13 13/12 12/11 33/32 16/15 15/14 28/27 27/26 13/12 16/15 45/44 22/21 21/20 40/39 65/64 16/15 15/14 56/55 33/32 40/39 26/25 25/24 36/35 49/48 64/63 45/44 66/65 91/90 15/14

(1/2) 8/15 7/13 6/11 5/9 9/16 4/7 7/12 3/5 8/13 5/8 7/11 9/14 2/3 11/16 9/13 7/10 5/7 8/11 11/15 3/4 10/13 7/9 11/14 4/5 13/16 9/11 5/6 11/13 6/7 13/15 7/8 8/9 9/10 10/11 11/12 12/13 13/14 14/15 15/16 1/1 cont.

16/15 105/104 78/77 55/54 81/80 64/63 49/48 36/35 40/39 65/64 56/55 99/98 28/27 33/32 144/143 91/90 50/49 56/55 121/120 45/44 40/39 91/90 99/98 56/55 65/64 144/143 55/54 66/65 78/77 91/90 105/104 64/63 81/80 100/99 121/120 144/143 169/168 196/195 225/224 16/15

(1/1) 16/15 15/14 14/13 13/12 12/11 11/10 10/9 9/8 8/7 15/13 7/6 13/11 6/5 11/9 16/13 5/4 14/11 9/7 13/10 4/3 15/11 11/8 7/5 10/7 13/9 16/11 3/2 14/9 11/7 8/5 13/8 5/3 12/7 7/4 16/9 9/5 11/6 13/7 15/8 2/1 cont.

16/15 225/224 196/195 169/168 144/143 121/120 100/99 81/80 64/63 105/104 91/90 78/77 66/65 55/54 144/143 65/64 56/55 99/98 91/90 40/39 45/44 121/120 56/55 50/49 91/90 144/143 33/32 28/27 99/98 56/55 65/64 40/39 36/35 49/48 64/63 81/80 55/54 78/77 105/104 16/15

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

15/14 91/90 66/65 45/44 64/63 49/48 36/35 25/24 26/25 40/39 33/32 56/55 15/14 16/15 65/64 40/39 21/20 22/21 45/44 16/15 13/12 27/26 28/27 15/14 16/15 33/32 12/11 13/12 14/13 15/14 16/15 9/8 10/9 11/10 12/11 13/12 14/13 15/14 16/15 1/0

The Farey Series of Order 16, (0/1 to 1/0)
Showing Epimoria
(compare with Lambdoma Cap-16)

Extended Farey Series 0/1 to 1/0,

Farey order 16 ($\mathcal{F}_{16}$) showing the Epimoria

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

epimoria: 1/0, 16/15, 15/14, 14/13, 13/12, 12/11, 11/10, 10/9, 9/8, 16/15, 15/14, 14/13, 13/12, 12/11, 33/32, 16/15, 15/14, 28/27, 27/26, 13/12, 16/15, 45/44, 22/21, 21/20, 40/39, 65/64, 16/15

(1/3) 5/14, 4/11, 3/8, 5/13, 2/5, 5/12, 3/7, 7/16, 4/9, 5/11, 6/13, 7/15, 1/2, 8/15, 7/13, 6/11, 5/9, 9/16, 4/7, 7/12, 3/5, 8/13, 5/8, 7/11, 9/14, 2/3 cont.

15/14, 56/55, 33/32, 40/39, 26/25, 25/24, 36/35, 49/48, 64/63, 45/44, 66/65, 91/90, 15/14, 16/15, 105/104, 78/77, 55/54, 81/80, 64/63, 49/48, 36/35, 40/39, 65/64, 56/55, 99/98, 28/27

(2/3) 11/16, 9/13, 7/10, 5/7, 8/11, 11/15, 3/4, 10/13, 7/9, 11/14, 4/5, 13/16, 9/11, 5/6, 11/13, 6/7, 13/15, 7/8, 8/9, 9/10, 10/11, 11/12, 12/13, 13/14, 14/15, 15/16, 1/1 cont

33/32, 144/143, 91/90, 50/49, 56/55, 121/120, 45/44, 40/39, 91/90, 99/98, 56/55, 65/64, 144/143, 55/54, 66/65, 78/77, 91/90, 105/104, 64/63, 81/80, 100/99, 121/120, 144/143, 169/168, 196/195, 225/224, 16/15

(1/1) 16/15, 15/14, 14/13, 13/12, 12/11, 11/10, 10/9, 9/8, 8/7, 15/13, 7/6, 13/11, 6/5, 11/9, 16/13, 5/4, 14/11, 9/7, 13/10, 4/3, 15/11, 11/8, 7/5, 10/7, 13/9, 16/11, 3/2 cont

16/15, 225/224, 196/195, 169/168, 144/143, 121/120, 100/99, 81/80, 64/63, 105/104, 91/90, 78/77, 66/65, 55/54, 144/143, 65/64, 56/55, 99/98, 91/90, 40/39, 45/44, 121/120, 56/55, 50/49, 91/80, 144/143, 33/32

(3/2) 14/9, 11/7, 8/5, 13/8, 5/3, 12/7, 7/4, 16/9, 9/5, 11/6, 13/7, 15/8, 2/1, 15/7, 13/6, 11/5, 9/4, 16/7, 7/3, 12/5, 5/2, 13/5, 8/3, 11/4, 14/5, 3/1 cont.

28/27, 99/98, 56/55, 65/64, 40/39, 36/35, 49/48, 64/63, 81/80, 55/54, 78/77, 105/104, 16/15, 15/14, 91/90, 66/65, 45/44, 64/63, 49/48, 36/35, 25/24, 26/25, 40/39, 33/32, 56/55, 15/14

(3/1) 16/5, 13/4, 10/3, 7/2, 11/3, 15/4, 4/1, 13/3, 9/2, 14/3, 5/1, 16/3, 11/2, 6/1, 13/2, 7/1, 15/2, 8/1, 9/1, 10/1, 11/1, 12/1, 13/1, 14/1, 15/1, 16/1, 1/0 end

16/15, 65/64, 40/39, 21/20, 22/21, 45/44, 16/15, 13/12, 27/26, 28/27, 15/14, 16/15, 33/32, 12/11, 13/12, 14/13, 15/14, 16/15, 9/8, 10/9, 11/10, 12/11, 13/12, 14/13, 15/14, 16/15, 1/0

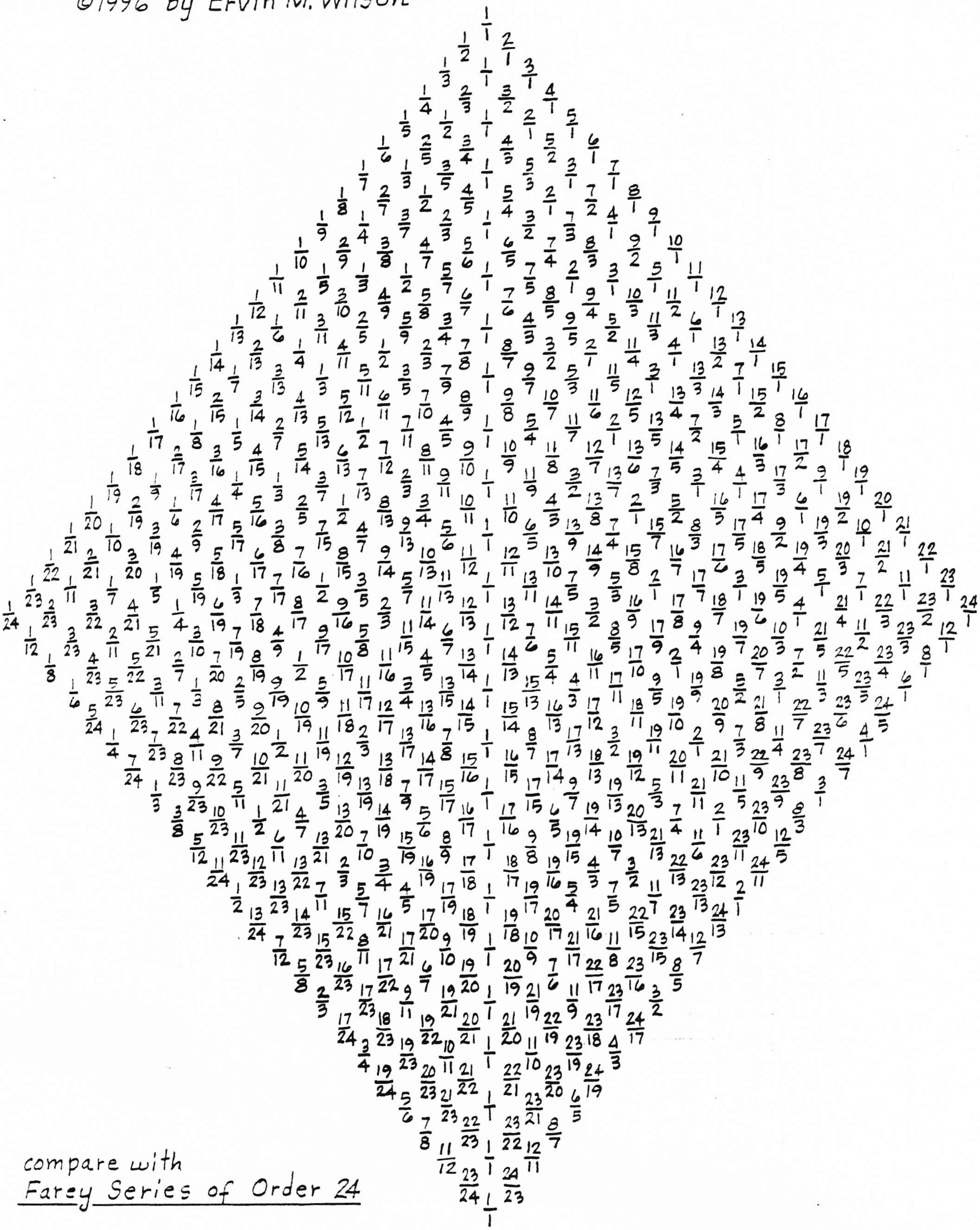
Compare with 16-cap Lambdoma ($\mathcal{L}_{16}$)

References: The Farey Series of order 1025, E. H. Neville, University Press Cambridge, 1950

A Brief History of the Lambdoma, Barbara Hero, 1994, Xenharmikon 16 Autumn 1995

Collected Papers of Charles Sanders Peirce, edited by Charles Hartshorne and Paul Weiss, Vol IV The Simplest Mathematics, Cambridge, Harvard University Press

Lambdoma, Cap-24



compare with
Farey Series of Order 24

Farey Series of Order 24, (0/1 to 1/0)

Showing Epimoria bc/ad, and Mediants $\frac{a+e}{b+f} = \frac{c}{d}$

Start

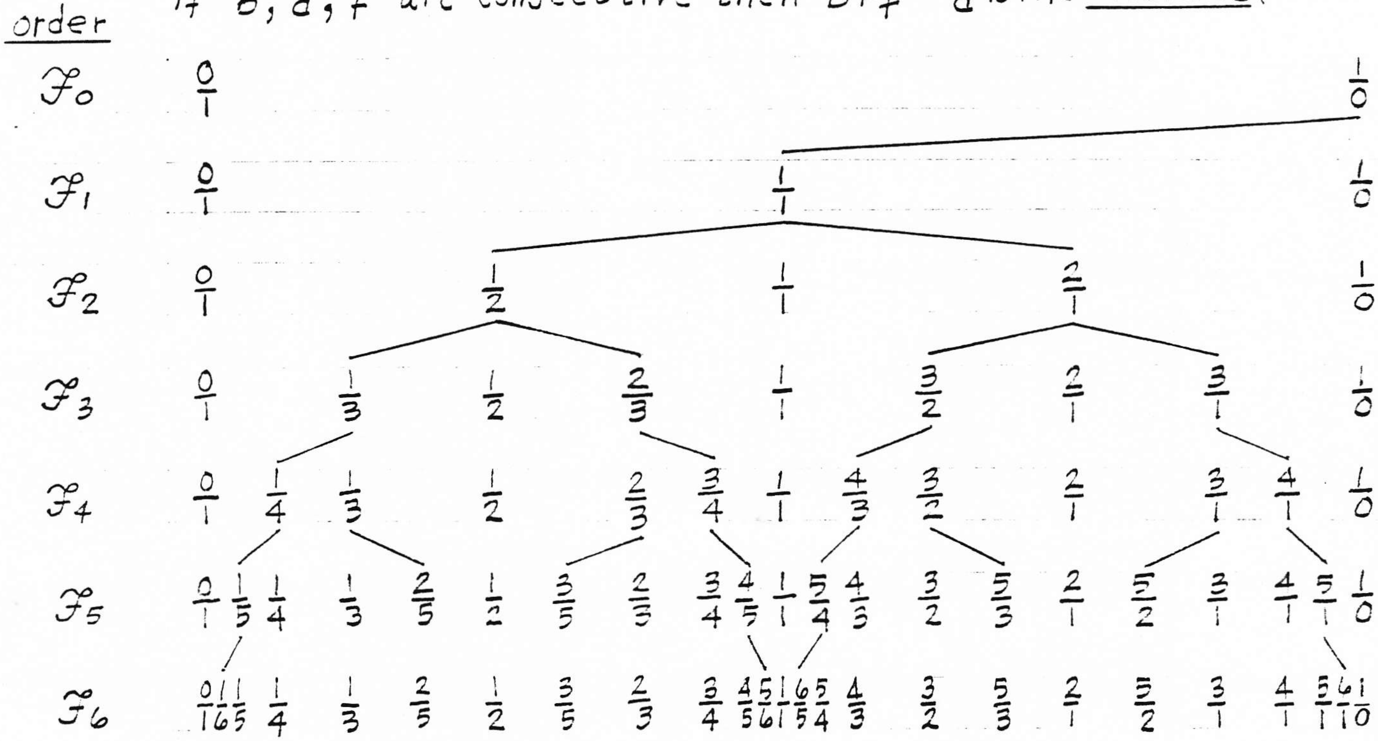
0/1	1/0	1/4	24/23	1/2	24/23	3/4	64/63	1/1	24/23	4/3	69/68	2/1	23/22	4/1	21/20
1/24	24/23	6/23	115/114	12/23	253/252	16/21	273/272	24/23	529/528	23/17	323/322	23/11	231/230	21/5	85/84
1/23	23/22	5/19	76/75	11/21	210/209	13/17	170/169	23/22	484/483	19/14	210/209	21/10	190/189	17/4	52/51
1/22	22/21	4/15	45/44	10/19	171/170	10/13	221/220	22/21	441/440	15/11	121/120	19/9	153/152	13/3	66/65
1/21	21/20	3/11	55/54	9/17	136/135	17/22	154/153	21/20	400/399	11/8	144/143	17/8	120/119	22/5	45/44
1/20	20/19	5/18	36/35	8/15	105/104	7/9	162/161	20/19	361/360	18/13	91/90	15/7	91/90	9/2	46/45
1/19	19/18	2/7	49/48	7/13	169/168	18/23	253/252	19/18	324/323	7/5	120/119	13/6	144/143	23/5	70/69
1/18	18/17	7/24	120/119	13/24	144/143	11/14	210/209	18/17	289/288	24/17	289/288	24/11	121/120	14/3	57/56
1/17	17/16	5/17	51/50	6/11	121/120	15/19	361/360	17/16	256/255	17/12	120/119	11/5	100/99	19/4	96/95
1/16	16/15	3/10	70/69	11/20	100/99	19/24	96/95	16/15	225/224	10/7	161/160	20/9	81/80	24/5	25/24
1/15	15/14	7/23	92/91	5/9	81/80	4/5	85/84	15/14	196/195	23/16	208/207	9/4	64/63	5/1	21/20
1/14	14/13	4/13	65/64	9/16	208/207	17/21	273/272	14/13	169/168	13/9	144/143	16/7	161/160	21/4	64/63
1/13	13/12	5/16	96/95	13/23	92/91	13/16	144/143	13/12	144/143	16/11	209/208	23/10	70/69	16/3	33/32
1/12	24/23	6/19	133/132	4/7	77/76	9/11	154/153	12/11	253/252	19/13	286/285	7/3	57/56	11/2	34/33
2/23	23/22	7/22	22/21	11/19	133/132	14/17	323/322	23/21	231/230	22/15	45/44	19/8	96/95	17/3	69/68
1/11	22/21	1/3	24/23	7/12	120/119	19/23	115/114	11/10	210/209	3/2	46/45	12/5	85/84	23/4	24/23
2/21	21/20	8/23	161/160	10/17	221/220	5/6	96/95	21/19	190/189	23/15	300/299	17/7	154/153	6/1	19/18
1/10	20/19	7/20	120/119	13/22	66/65	16/19	209/208	10/9	171/170	20/13	221/220	22/9	45/44	19/3	39/38
2/19	19/18	6/17	85/84	3/5	70/69	11/13	221/220	19/17	153/152	17/11	154/153	5/2	46/45	13/2	40/39
1/9	18/17	5/14	56/55	14/23	253/252	17/20	120/119	9/8	136/135	14/9	99/98	23/9	162/161	20/3	21/20
2/17	17/16	4/11	77/76	11/18	144/143	6/7	133/132	17/15	120/119	11/7	133/132	18/7	91/90	7/1	22/21
1/8	24/23	7/19	57/56	8/13	169/168	19/22	286/285	8/7	161/160	19/12	96/95	13/5	105/104	22/3	45/44
3/23	46/45	3/8	64/63	13/21	105/104	13/15	300/299	23/20	300/299	8/5	105/104	21/8	64/63	15/2	46/45
2/15	45/44	8/21	105/104	5/8	96/95	20/23	161/160	15/13	286/285	21/13	169/168	8/3	57/56	23/3	24/23
3/22	22/21	5/13	91/90	12/19	133/132	7/8	120/119	22/19	133/132	13/8	144/143	19/7	77/76	8/1	17/16
1/7	21/20	7/18	162/161	7/11	99/98	15/17	136/135	7/6	120/119	18/11	253/252	11/4	56/55	17/2	18/17
3/20	40/39	9/23	46/45	9/14	154/153	8/9	153/152	20/17	221/220	23/14	70/69	14/5	85/84	9/1	19/18
2/13	39/38	2/5	45/44	11/17	221/220	17/19	171/170	13/11	209/208	5/3	66/65	17/6	120/119	19/2	20/19
3/19	19/18	9/22	154/153	13/20	300/299	9/10	190/189	19/16	96/95	22/13	221/220	20/7	161/160	10/1	21/20
1/6	24/23	7/17	85/84	15/23	46/45	19/21	210/209	6/5	115/114	17/10	120/119	23/8	24/23	21/2	22/21
4/23	69/68	5/12	96/95	2/3	45/44	10/11	231/230	23/19	323/322	12/7	133/132	3/1	22/21	11/1	23/22
3/17	34/33	8/19	57/56	15/22	286/285	21/23	253/252	17/14	154/153	19/11	77/76	22/7	133/132	23/2	24/23
2/11	33/32	3/7	70/69	13/19	209/208	11/12	144/143	11/9	144/143	7/4	92/91	19/6	96/95	12/1	13/12
3/16	64/63	10/23	161/160	11/16	144/143	12/13	169/168	16/13	273/272	23/13	208/207	16/5	65/64	13/1	14/13
4/21	21/20	7/16	64/63	9/13	208/207	13/14	196/195	21/17	85/84	16/9	81/80	13/4	92/91	14/1	15/14
1/5	25/24	4/9	81/80	16/23	161/160	14/15	225/224	5/4	96/95	9/5	100/99	23/7	70/69	15/1	16/15
5/24	96/95	9/20	100/99	7/10	120/119	15/16	256/255	24/19	361/360	20/11	121/120	10/3	51/50	16/1	17/16
4/19	57/56	5/11	121/120	12/17	289/288	16/17	289/288	19/15	210/209	11/6	144/143	17/5	120/119	17/1	18/17
3/14	70/69	11/24	144/143	17/24	120/119	17/18	324/323	14/11	253/252	24/13	169/168	24/7	49/48	18/1	19/18
5/23	46/45	6/13	91/90	5/7	91/90	18/19	361/360	23/18	162/161	13/7	105/104	7/2	36/35	19/1	20/19
2/9	45/44	7/15	120/119	13/18	144/143	19/20	400/399	9/7	154/153	15/8	136/135	18/5	55/54	20/1	21/20
5/22	66/65	8/17	153/152	8/11	121/120	20/21	441/440	22/17	221/220	17/9	171/170	11/3	45/44	21/1	22/21
3/13	52/51	9/19	190/189	11/15	210/209	21/22	484/483	13/10	170/169	19/10	210/209	15/4	76/75	22/1	23/22
4/17	85/84	10/21	231/230	14/19	323/322	22/23	529/528	17/13	273/272	21/11	253/252	19/5	115/114	23/1	24/23
5/21	21/20	11/23	23/22	17/23	69/68	23/24	24/23	21/16	64/63	23/12	24/23	23/6	24/23	24/1	1/0
(1/4)		(1/2)		(3/4)		(1/1)		(4/3)		(2/1)		(4/1)		1/0	

End

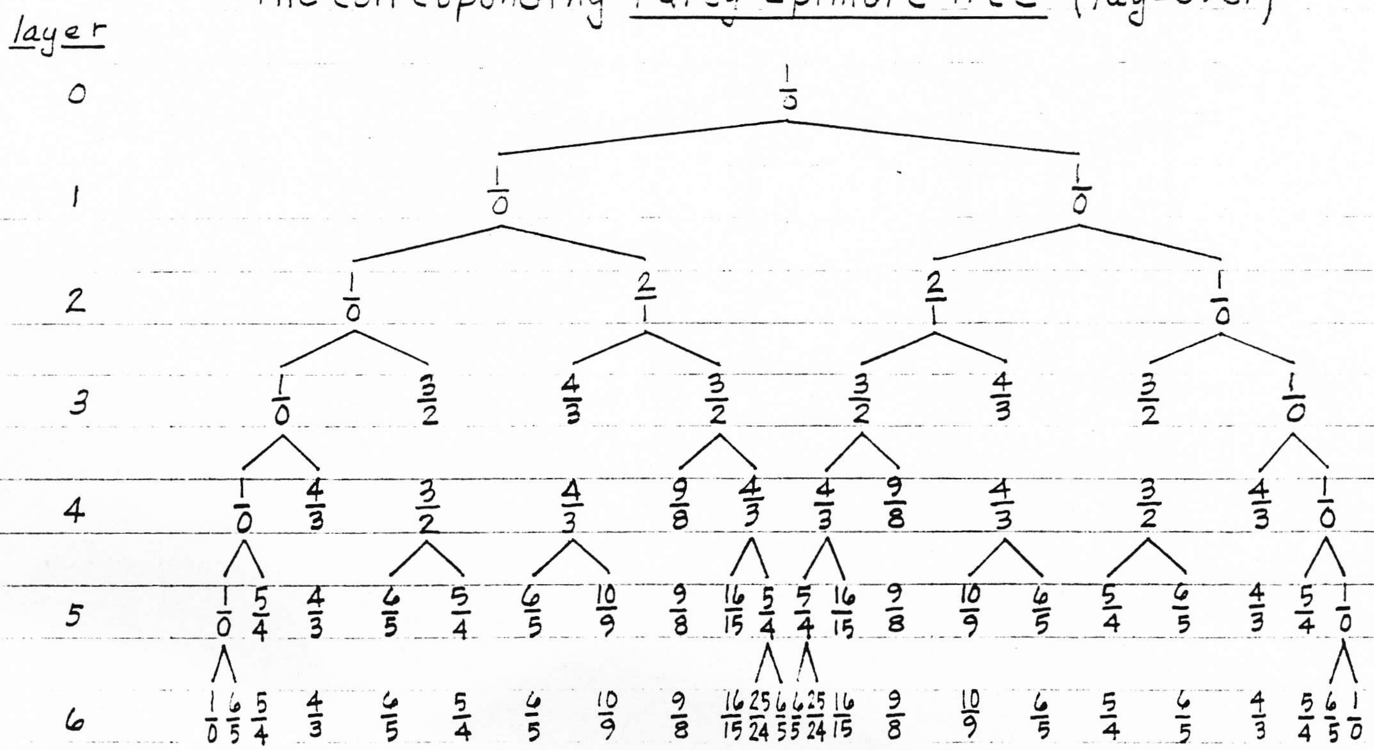
Compare with Lambdoma 24

Farey Mediant Tree thru Order 6; (0/1 to 1/0)

If $\frac{a}{b}, \frac{c}{d}, \frac{e}{f}$ are consecutive then $\frac{a+e}{b+f} = \frac{c}{d}$ is the <u>mediant</u> (reduced).



the corresponding <u>Farey Epimore Tree</u> (lay-over)

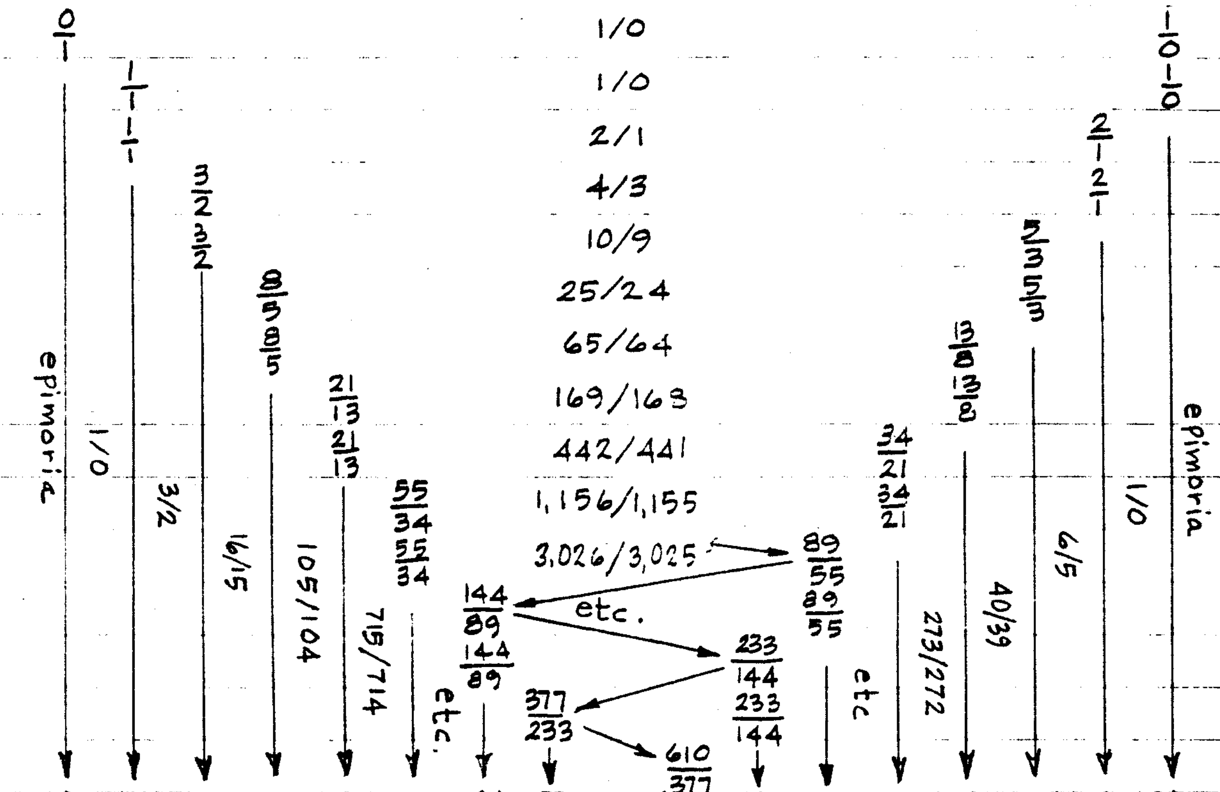


If $\frac{a}{b}, \frac{c}{d}$ are consecutive then $bc-ad=1$, and $\frac{bc}{ad}$ is the <u>epimore</u>.
Note; Compare with Lambdoma Cap-6.

(addendum 1)

Fibonacci Rational Zig-Zag Sequence to State 15

State	epimoria
0	1/0
1	1/0
2	2/1
3	4/3
4	10/9
5	25/24
6	65/64
7	169/168
8	442/441
9	1,156/1,155
10	3,026/3,025
11	
12	
13	
14	
15	



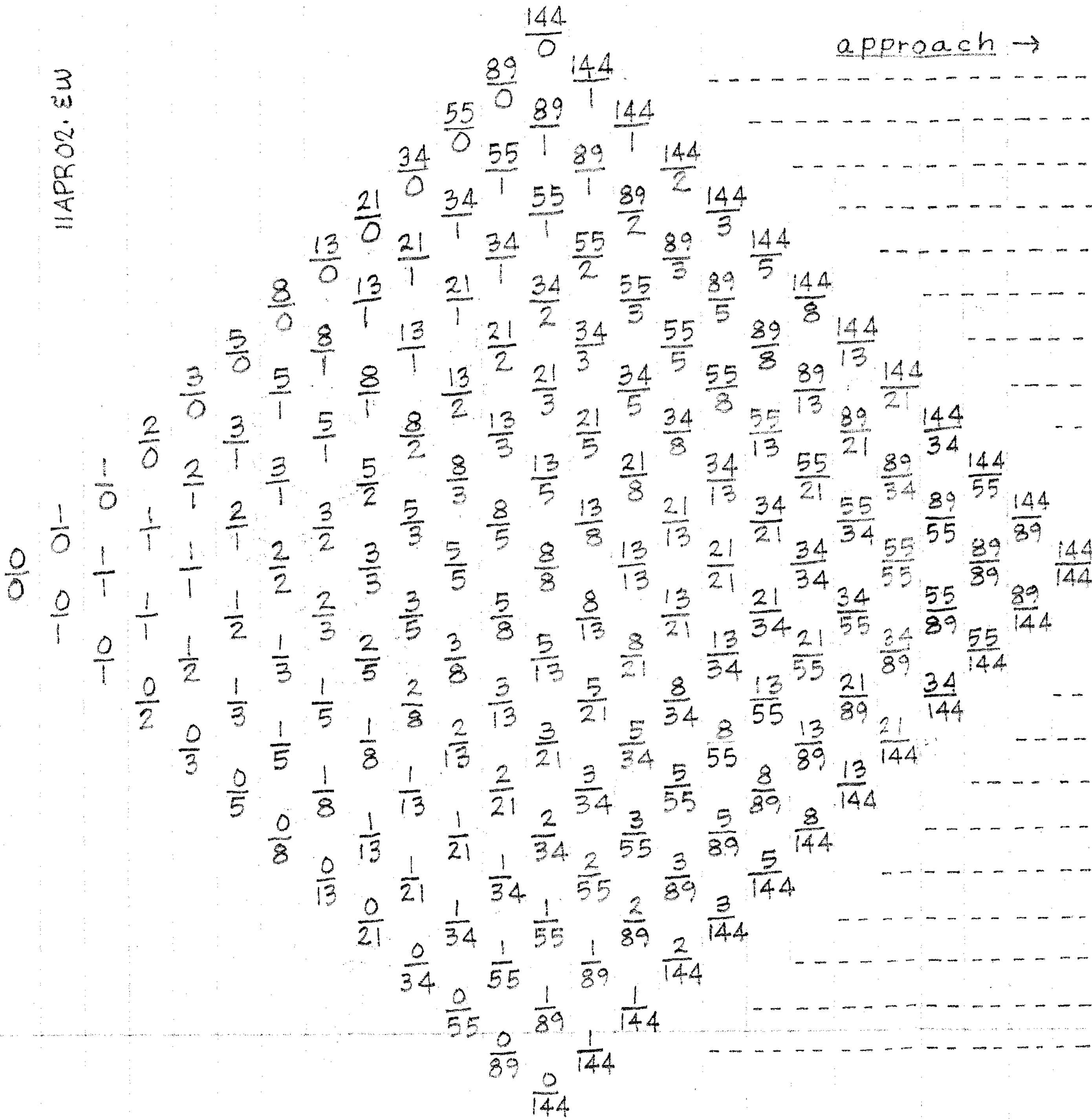
State 15	0/1	1/1	3/2	8/5	21/13	55/34	144/89	377/233	987/610	610/377	233/144	89/55	34/21	13/8	5/3	2/1	1/0
Sort Magnitude; $\frac{a}{b}$	(zero)	1.000000	1.500000	1.600000	1.615385	1.617647	1.617978	1.618026	1.618033	1.618037	1.618056	1.618182	1.619048	1.625000	1.666666	2.000000	(infinity)
Mediants; (shown unreduced) $\frac{a+e}{b+f} = \frac{c}{d}$		3/3	9/6	24/15	63/39	165/102	432/267	1,131/699	987/610	1,220/754	699/432	267/165	102/63	39/24	15/9	6/3	
Fibonacci Rational Series of State 15	0/1	1/1	3/2	8/5	21/13	55/34	144/89	377/233	987/610	610/377	233/144	89/55	34/21	13/8	5/3	2/1	1/0
Epimoria; $\frac{b \times c}{a \times d}$	1/0	3/2	16/15	105/104	715/714	4,896/4,895	33,553/33,552	229,971/229,970	372,100/372,099	87,841/87,840	12,816/12,815	1,870/1,869	273/272	40/39	6/5	1/0	

$\frac{a}{b}\ \frac{c}{d}\ \frac{e}{f}$ are consecutive

This example is imbedded in the *Peirce Sequence* (Scale-Tree).

Lambdoma of Fibonacci Sequence

11APR02, EW



approach → attractor	
199.005024999	Φ^{11}
122.991869381	Φ^{10}
76.013155618	Φ^{9}
46.978713764	Φ^{8}
29.034441854	Φ^{7}
17.944271910	Φ^{6}
11.090169944	Φ^{5}
6.854101966	Φ^{4}
4.236067978	Φ^{3}
2.618033989	Φ^{2}
1.618033989	Φ^{1}
1.000000000	Φ^{0}
.618033989	Φ^{-1}
.381966011	Φ^{-2}
.236067978	Φ^{-3}
.145898034	Φ^{-4}
.090169944	Φ^{-5}
.055728090	Φ^{-6}
.034441854	Φ^{-7}
.021286236	Φ^{-8}
.013155617	Φ^{-9}
.008130619	Φ^{-10}
.005024999	Φ^{-11}

FULL SET OF GEAR RATIOS (0/1 to 12/0) & 12, Common Fractions & Decimal Forms

 Ref; 14000 GEAR Ratios by Ray M. Page 1942-1961.

0/0	X	0/1 0.000 000	0/2 0.000 000	0/3 0.000 000	0/4 0.000 000	0/5 0.000 000	0/6 0.000 000	0/7 0.000 000	0/8 0.000 000	0/9 0.000 000	0/10 0,000 000	0/11 0.000 000	0/12 0.000 000
1/0	∞	1/1 1.000 000	1/2 .500 000	1/3 .333 333	1/4 .250 000	1/5 .200 000	1/6 .166 667	1/7 .142 857	1/8 .125 000	1/9 .111 111	1/10 .100 000	1/11 .090 909	1/12 .083 333
2/0	∞	2/1 2,000 000	2/2 1,000 000	2/3 .666 667	2/4 .500 000	2/5 .400 000	2/6 .333 333	2/7 .285 714	2/8 .250 000	2/9 .222 222	2/10 .200 000	2/11 .018 182	2/12 .166 667
3/0	∞	3/1 3.000 000	3/2 1.500 000	3/3 1.000 000	3/4 .750 000	3/5 .600 000	3/6 .500 000	3/7 .428 571	3/8 .375 000	3/9 .333 333	3/10 .300 000	3/11 .272 727	3/12 .250 000
4/0	∞	4/1 4.000 000	4/2 2.000 000	4/3 1.333 333	4/4 1.000 000	4/5 .800 000	4/6 .666 667	4/7 .571 429	4/8 .500 000	4/9 .444 444	4/10 .400 000	4/11 .363 636	4/12 .333 333
5/0	∞	5/1 5,000 000	5/2 2.500 000	5/3 1.666 667	5/4 1,250 000	5/5 1.000 000	5/6 .833 333	5/7 .714 286	5/8 .625 000	5/9 .555 556	5/10 .500 000	5/11 .454 545	5/12 .416 667
6/0	∞	6/1 6.000 000	6/2 3,000 000	6/3 2,000 000	6/4 1.500 000	6/5 1.200 000	6/6 1,000 000	6/7 .857 143	6/8 .750 000	6/9 .666 667	6/10 .600 000	6/11 .545 455	6/12 .500 000
7/0	∞	7/1 7,000 000	7/2 3.500 000	7/3 2,333 333	7/4 1.750 000	7/5 1.400 000	7/6 1.166 667	7/7 1.000 000	7/8 .875 000	7/9 .777 778	7/10 .700 000	7/11 .636 364	7/12 .583 333
8/0	∞	8/1 8.000 000	8/2 4.000 000	8/3 2.666 667	8/4 2.000 000	8/5 1.600 000	8/6 1.333 333	8/7 1.142 857	8/8 1.000 000	8/9 .888 889	8/10 .800 000	8/11 .727 273	8/12 .666 667
9/0	∞	9/1 9,000 000	9/2 4.500 000	9/3 3.000 000	9/4 2,250 000	9/5 1.800 000	9/6 1.500 000	9/7 1.285 714	9/8 1.125 000	9/9 1.000 000	9/10 .900 000	9/11 .818 182	9/12 .750 000
10/0	∞	10/1 10,000 000	10/2 5.000 000	10/3 3.333 333	10/4 2.500 000	10/5 2.000 000	10/6 1.666 667	10/7 1.428 571	10/8 1.250 000	10/9 1.111 111	10/10 1.000 000	10/11 .909 091	10/12 .833 333
11/0	∞	11/1 11.000 000	11/2 5.500 000	11/3 3.666 667	11/4 2,750 000	11/5 2,200 000	11/6 1.833 333	11/7 1,571 428	11/8 1.375 000	11/9 1.222 222	11/10 1,100 000	11/11 1,000 000	11/12 .916 667
12/0	∞	12/1 12,000 000	12/2 6.000 000	12/3 4.000 000	12/4 3.000 000	12/5 2.400 000	12/6 2,000 000	12/7 1.714 286	12/8 1.500 000	12/9 1.333 333	12/10 1.200 000	12/11 1.090 909	12/12 1.000 000

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