

A SEQUENCE OF CONSTANT STRUCTURES

as predicted by Brun's Algorithm $(2/1, 3/2, 5/4), (a-b)$
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1	$\frac{2}{1}$															
2	$\frac{3}{2}$								$\frac{4}{3}$							
3	$\frac{4}{3}$						$\frac{9}{8}$		$\frac{4}{3}$							
5	$\frac{5}{4}$				$\frac{16}{15}$	$\frac{9}{8}$		$\frac{5}{4}$				$\frac{16}{15}$				
7	$\frac{9}{8}$		$\frac{10}{9}$		$\frac{16}{15}$	$\frac{9}{8}$		$\frac{10}{9}$		$\frac{9}{8}$		$\frac{16}{15}$				
10	$\frac{10}{9}$		$\frac{81}{80}$	$\frac{10}{9}$		$\frac{16}{15}$	$\frac{81}{80}$	$\frac{10}{9}$		$\frac{10}{9}$		$\frac{81}{80}$	$\frac{10}{9}$		$\frac{16}{15}$	
15	$\frac{16}{15}$	$\frac{25}{24}$	$\frac{81}{80}$	$\frac{16}{15}$	$\frac{25}{24}$	$\frac{16}{15}$	$\frac{81}{80}$	$\frac{25}{24}$	$\frac{16}{15}$	$\frac{16}{15}$	$\frac{25}{24}$	$\frac{81}{80}$	$\frac{16}{15}$	$\frac{25}{24}$	$\frac{16}{15}$	
22	$\frac{25}{24}$	$\frac{128}{125}$	$\frac{25}{24}$	$\frac{81}{80}$	$\frac{25}{24}$	$\frac{128}{125}$	$\frac{25}{24}$	$\frac{128}{125}$	$\frac{25}{24}$	$\frac{81}{80}$	$\frac{25}{24}$	$\frac{128}{125}$	$\frac{25}{24}$	$\frac{128}{125}$	$\frac{25}{24}$	$\frac{128}{125}$

34

53

etc



Example of Viggo Brun's Euclidian Algorithm, (a-b)

date: July 14, 1995 by Erv Wilson

1.00000 .58496 .32192

Fig 2

(2/1) 1.00000	a	1	0	0
(3/2) .58496	b	0	1	0
(5/4) .32192	c	0	0	1

Fig 4

(4/3) .41503	1	0	0	
(3/2) .58496	1	1	0	2
(5/4) .32192	0	0	1	

Fig 5

(3/2) .58496	1	1	0
(4/3) .41504	1	0	0
(5/4) .32193	0	0	1

Fig 6

(9/8) .16993	1	1	0	
(4/3) .41504	2	1	0	3
(5/4) .32193	0	0	1	

Fig 7

(4/3) .41504	2	1	0
(5/4) .32193	0	0	1
(9/8) .16993	1	1	0

Fig 8

(16/15) .09311	2	1	0	
(5/4) .32193	2	1	1	5
(9/8) .16993	1	1	0	

Fig 9

(5/4) .32193	2	1	1
(9/8) .16993	1	1	0
(16/15) .09311	2	1	0

Fig 10

(19/9) .15200	2	1	1	
(9/8) .16993	3	2	1	7
(16/15) .09311	2	1	0	

Fig 11

(9/8) .16993	3	2	1
(19/9) .15200	2	1	1
(16/15) .09311	2	1	0

Fig 12

(81/80) .01792	3	2	1	
(19/9) .15200	5	3	2	10
(16/15) .09311	2	1	0	

Fig 13

(19/9) .15200	5	3	2
(16/15) .09311	2	1	0
(81/80) .01792	3	2	1

Fig 14

(25/24) .05889	5	3	2	
(16/15) .09311	7	4	2	15
(81/80) .01792	3	2	1	

1.00000 .584962 .32192

Fig 15

$(\frac{16}{5})$.09311	7	4	2
$(\frac{25}{24})$.05889	5	3	2
$(\frac{81}{80})$.01792	3	2	1

Fig 16

$(\frac{128}{125})$.03422	7	4	2	
$(\frac{25}{24})$.05889	<u>12</u>	7	4	22
$(\frac{81}{80})$.01792	3	2	1	

Fig 17

$(\frac{25}{24})$.05889	12	7	4
$(\frac{128}{125})$.03422	7	4	2
$(\frac{81}{80})$.01792	3	2	1

Fig 18

$(\frac{3,125}{3,072})$.02468	12	7	4	
$(\frac{128}{125})$.03422	<u>19</u>	11	6	34
$(\frac{81}{80})$.01792	3	2	1	

Fig 19

$(\frac{128}{125})$.03422	19	11	6
$(\frac{3,125}{3,072})$.02468	12	7	4
$(\frac{81}{80})$.01792	3	2	1

Fig 20

$(\frac{393,216}{390,625})$.00953	19	11	6	
$(\frac{3,125}{3,072})$.02468	<u>31</u>	18	10	53
$(\frac{81}{80})$.01792	3	2	1	

Example; Sequence of Constant Structures Using Bruns Algorithm
 (2/1, 3/2, 5/4), (a-c), Ternary Sums
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1	$\frac{2}{1}$																							
2	$\frac{5}{4}$						$\frac{8}{5}$																	
3	$\frac{5}{4}$						$\frac{5}{4}$						$\frac{32}{25}$											
3	$\frac{5}{4}$						$\frac{32}{25}$									$\frac{5}{4}$								
4	$\frac{5}{4}$						$\frac{6}{5}$						$\frac{16}{15}$		$\frac{5}{4}$									
6	$\frac{75}{64}$				$\frac{16}{15}$		$\frac{6}{5}$						$\frac{16}{15}$		$\frac{75}{64}$				$\frac{16}{15}$					
7	$\frac{16}{15}$		$\frac{75}{64}$				$\frac{16}{15}$		$\frac{9}{8}$		$\frac{16}{15}$		$\frac{75}{64}$				$\frac{16}{15}$							
9	$\frac{16}{15}$		$\frac{1,125}{1,024}$		$\frac{16}{15}$		$\frac{9}{8}$		$\frac{16}{15}$		$\frac{16}{15}$		$\frac{1,125}{1,024}$		$\frac{16}{15}$		$\frac{16}{15}$							
10	$\frac{16}{15}$		$\frac{1,125}{1,024}$		$\frac{16}{15}$		$\frac{16}{15}$		$\frac{135}{128}$		$\frac{16}{15}$		$\frac{16}{15}$		$\frac{1,125}{1,024}$		$\frac{16}{15}$		$\frac{16}{15}$					
12	$\frac{16}{15}$		$\frac{135}{128}$		$\frac{25}{24}$		$\frac{16}{15}$		$\frac{16}{15}$		$\frac{135}{128}$		$\frac{16}{15}$		$\frac{25}{24}$		$\frac{135}{128}$		$\frac{16}{15}$		$\frac{16}{15}$			
19	$\frac{25}{24}$		$\frac{128}{125}$		$\frac{135}{128}$		$\frac{25}{24}$		$\frac{128}{125}$		$\frac{25}{24}$		$\frac{135}{128}$		$\frac{128}{125}$		$\frac{25}{24}$		$\frac{128}{125}$		$\frac{25}{24}$			
22	$\frac{25}{24}$		$\frac{128}{125}$		$\frac{1,975}{1,384}$		$\frac{128}{125}$		$\frac{25}{24}$		$\frac{128}{125}$		$\frac{25}{24}$		$\frac{1,975}{1,384}$		$\frac{128}{125}$		$\frac{25}{24}$		$\frac{128}{125}$		$\frac{25}{24}$	

31

34

53
etc.

Viggo Brun's Algorithm (a-c), with Three-fold Sums

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$(2/1)$ $(3/2)$ $(5/4)$

a	$(2/1)$ 1.000000	1	0	0		$(8/5)$.678071	1	0	0	
b	① $(3/2)$.584962	0	1	0	(1)	$(3/2)$.584962	0	1	0	2
c	② $(5/4)$.321928	0	0	1	↑	$(5/4)$.321928	1	0	1	↑
	$(8/5)$.678071	1	0	0		④ $(32/25)$.356143	1	0	0	
	$(3/2)$.584962	0	1	0		$(3/2)$.584962	0	1	0	3
	$(5/4)$.321928	1	0	1		$(5/4)$.321928	2	0	1	
	$(3/2)$.584962	0	1	0		⑤ $(6/5)$.263034	0	1	0	
	$(32/25)$.356143	1	0	0		$(32/25)$.356143	1	0	0	3
	$(5/4)$.321928	2	0	1		$(5/4)$.321928	2	1	1	
	$(32/25)$.356143	1	0	0		⑥ $(16/15)$.093109	1	0	0	
	$(5/4)$.321928	2	1	1		$(5/4)$.321928	2	1	1	4
	$(6/5)$.263034	0	1	0		$(6/5)$.263034	1	1	0	
	$(5/4)$.321928	2	1	1		⑦ $(75/64)$.228818	2	1	1	
	$(6/5)$.263034	1	1	0		$(6/5)$.263034	1	1	0	6
	$(16/15)$.093109	1	0	0		$(16/15)$.093109	3	1	1	
	$(6/5)$.263034	1	1	0		⑧ $(9/8)$.169925	1	1	0	
	$(75/64)$.228818	2	1	1		$(75/64)$.228818	2	1	1	7
	$(16/15)$.093109	3	1	1		$(16/15)$.093109	4	2	1	
	$(75/64)$.228818	2	1	1		⑨ $(1125/1024)$.135709	2	1	1	
	$(9/8)$.169925	1	1	0		$(9/8)$.169925	1	1	0	9
	$(16/15)$.093109	4	2	1		$(16/15)$.093109	6	3	2	
	$(9/8)$.169925	1	1	0		⑩ $(135/128)$.076815	1	1	0	
	$(1125/1024)$.135709	2	1	1		$(1125/1024)$.135709	2	1	1	10
	$(16/15)$.093109	6	3	2		$(16/15)$.093109	7	4	2	

Notes on Re-seeding Bruns Algorithm

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$(\frac{2}{1})$ $(\frac{3}{2})$ $(\frac{5}{4})$

Re-Seed from (a-b) to (a-c)

① $(\frac{9}{8})$, .169925 a	3	2	1	④ $(\frac{135}{128})$, .076815	3	2	1
② $(\frac{10}{9})$, .152003 b	2	1	1	$(\frac{10}{9})$, .152003	2	1	1
③ $(\frac{16}{15})$, .093109 c	2	1	0	$(\frac{16}{15})$, .093109	5	3	1
							10
$(\frac{10}{9})$, .152003	2	1	1	⑤ $(\frac{256}{243})$, .075187	2	1	1
$(\frac{16}{15})$, .093109	5	3	1	$(\frac{16}{15})$, .093109	5	3	1
$(\frac{135}{128})$, .076815	3	2	1	$(\frac{135}{128})$, .076815	5	3	2
							Just/Pyth
$(\frac{16}{15})$, .093109	5	3	1	⑥ $(\frac{81}{80})$, .017921	5	3	1
$(\frac{135}{128})$, .076815	5	3	2	$(\frac{135}{128})$, .076815	5	3	2
$(\frac{256}{243})$, .075187	2	1	1	$(\frac{256}{243})$, .075187	7	4	2
							Just/Pyth
$(\frac{135}{128})$, .076815	5	3	2	⑦ $(\frac{25}{24})$, .058893	5	3	2
$(\frac{256}{243})$, .075187	7	4	2	$(\frac{256}{243})$, .075187	7	4	2
$(\frac{81}{80})$, .017921	5	3	1	$(\frac{81}{80})$, .017921	10	6	3
							22 Classic India
$(\frac{256}{243})$, .075187	7	4	2	⑧ $(\frac{20480}{19683})$, .057265	7	4	2
$(\frac{25}{24})$, .058893	5	3	2	$(\frac{25}{24})$, .058893	5	3	2
$(\frac{81}{80})$, .017921	10	6	3	$(\frac{81}{80})$, .017921	17	10	5
							29
$(\frac{25}{24})$, .058893	5	3	2	⑨ $(\frac{250}{243})$, .040971	5	3	2
$(\frac{20480}{19683})$, .057265	7	4	2	$(\frac{20480}{19683})$, .057265	7	4	2
$(\frac{81}{80})$, .017921	17	10	5	$(\frac{81}{80})$, .017921	22	13	7
							34
$(\frac{20480}{19683})$, .057265	7	4	2	⑩ $(\frac{11638400}{1594323})$, .039343680	7	4	2
$(\frac{250}{243})$, .040971	5	3	2	$(\frac{250}{243})$, .040971	5	3	2
$(\frac{81}{80})$, .017921	22	13	7	$(\frac{81}{80})$, .017921	29	17	9
							41
$(\frac{250}{243})$, .040971	5	3	2	⑪ $(\frac{20,000}{19,683})$, .023049873	5	3	2
①, .039343	7	4	2	①, .039343	7	4	2
$(\frac{81}{80})$, .017921	29	17	9	$(\frac{81}{80})$, .017921	34	20	11
							46

①	.039343	7	4	2	③	.021421772	7	4	2	
② $\left(\frac{20,000}{19,683}\right)$	.023049	5	3	2	②	.023049	5	3	2	53
$81/80$	.017921	34	20	11	$81/80$	.017921	41	24	13	
										<u>END</u>
②	.023049	5	3	2	④	.005127965	5	3	2	
③	.021421	7	4	2	③	.021421	7	4	2	58
$(81/80)$	.017921	41	24	13	$81/80$	.017921	46	27	15	
③	.021421	7	4	2	⑤	.016293807	7	4	2	
$81/80$	.017921	46	27	15	$81/80$	.017921	46	27	15	65
④	.005127	5	3	2	④	.005127	12	7	4	

$$\frac{16}{15} \times \frac{16}{15} \times \frac{10}{9} = \frac{512}{405}$$

Letter to John Chalmers
from Eric Wilson, July 23, 1995

$\frac{9}{8}$		$\frac{10}{9}$		$\frac{9}{8}$		$\frac{16}{15}$		$\frac{10}{9}$		$\frac{9}{8}$		$\frac{16}{15}$	
$\frac{16}{15}$	$\frac{135}{128}$	$\frac{10}{9}$		$\frac{16}{15}$	$\frac{135}{128}$	$\frac{16}{15}$	$\frac{10}{9}$		$\frac{16}{15}$	$\frac{135}{128}$	$\frac{16}{15}$	$\frac{135}{128}$	$\frac{16}{15}$
$\frac{16}{15}$		$\frac{256}{243}$	$\frac{135}{128}$				$\frac{256}{243}$	$\frac{135}{128}$					

Notes on a Brun Progression

	$\frac{9}{8}$		$\frac{10}{9}$		$\frac{16}{15}$		$\frac{9}{8}$		$\frac{10}{9}$		$\frac{16}{15}$		$\frac{9}{8}$		7
3-Interval, 5-Cap 7	$\frac{135}{128}$	$\frac{16}{15}$	$\frac{10}{9}$		$\frac{16}{15}$	$\frac{135}{128}$	$\frac{16}{15}$	$\frac{10}{9}$		$\frac{16}{15}$	$\frac{135}{128}$	$\frac{16}{15}$	$\frac{135}{128}$	$\frac{16}{15}$	10
3-Interval, 5-Cap 10	$\frac{135}{128}$	$\frac{16}{15}$	$\frac{135}{128}$	$\frac{256}{243}$	$\frac{16}{15}$	$\frac{135}{128}$	$\frac{16}{15}$	$\frac{135}{128}$	$\frac{256}{243}$	$\frac{16}{15}$	$\frac{135}{128}$	$\frac{16}{15}$	$\frac{135}{128}$	$\frac{16}{15}$	12
3-Interval, 5-Cap 12	$\frac{135}{128}$	$\frac{256}{243}$	$\frac{81}{80}$	$\frac{135}{128}$	$\frac{256}{243}$	$\frac{81}{80}$	$\frac{256}{243}$	$\frac{135}{128}$	$\frac{81}{80}$	$\frac{256}{243}$	$\frac{135}{128}$	$\frac{256}{243}$	$\frac{81}{80}$	$\frac{256}{243}$	17
(Skismatic) Interpolation	$\frac{256}{243}$	$\frac{135}{128}$	$\frac{81}{80}$	$\frac{256}{243}$	$\frac{135}{128}$	$\frac{81}{80}$	$\frac{256}{243}$	$\frac{135}{128}$	$\frac{81}{80}$	$\frac{256}{243}$	$\frac{135}{128}$	$\frac{81}{80}$	$\frac{256}{243}$	$\frac{135}{128}$	2
3-Interval India 5-Cap 22	$\frac{256}{243}$	$\frac{81}{80}$	$\frac{25}{24}$	$\frac{81}{80}$	$\frac{256}{243}$	$\frac{81}{80}$	$\frac{25}{24}$	$\frac{81}{80}$	$\frac{256}{243}$	$\frac{81}{80}$	$\frac{25}{24}$	$\frac{81}{80}$	$\frac{256}{243}$	$\frac{81}{80}$	2

$\frac{9}{8}$	$\frac{10}{9}$	$\frac{16}{15}$	$\frac{9}{8}$	$\frac{10}{9}$	$\frac{16}{15}$	$\frac{9}{8}$	7
$\frac{135}{128}$	$\frac{16}{15}$	$\frac{10}{9}$	$\frac{16}{15}$	$\frac{135}{128}$	$\frac{16}{15}$	$\frac{10}{9}$	10
$\frac{135}{128}$	$\frac{16}{15}$	$\frac{135}{128}$	$\frac{256}{243}$	$\frac{16}{15}$	$\frac{135}{128}$	$\frac{16}{15}$	12
$\frac{135}{128}$	$\frac{256}{243}$	$\frac{81}{80}$	$\frac{135}{128}$	$\frac{256}{243}$	$\frac{81}{80}$	$\frac{256}{243}$	17
$\frac{25}{24}$	$\frac{81}{80}$	$\frac{256}{243}$	$\frac{25}{24}$	$\frac{81}{80}$	$\frac{256}{243}$	$\frac{25}{24}$	22

Letter to John Ch. Notes on a Brun Progression E. Wilson, July 23, 1995
29

Brun's procedure, (re-seeding from (1-2) to (1-3))
and noting sums-of-three

$$\begin{aligned} \frac{9}{8} \quad \frac{256}{243} \times \frac{80}{81} &= \frac{20,480}{19,683} \times \frac{80}{81} = \frac{1,638,400}{1,594,323} \\ \frac{16}{15} \quad \frac{25}{24} \times \frac{80}{81} &= \frac{250}{243} \times \frac{80}{81} = \frac{20,000}{19,683} \times \frac{80}{81} = \frac{1,600,000}{1,594,323} \\ \frac{25}{24} \quad \frac{135}{128} \times \frac{80}{81} &= \frac{675}{648} \end{aligned}$$

$(\frac{256}{243})$	.075187	7	4	2	$(\frac{2048}{2025})$	.01629	7	4	2
$(\frac{25}{24})$	.058893	5	3	2	$(\frac{25}{24})$	.058893	12	7	4
$(\frac{81}{80})$	.017921	10	6	3	$(\frac{81}{80})$	.017921	10	6	3

Bouncing off Brun (w reseed and triplacci sums)

Triplacci sums

Actually
Truly
blue-green
algorithm
shminetee

ERV-SPEC

VIGGO BRUN'S METHOD WITH THREE INTERVALS--MODIFIED TO (a-c)

ERV WILSON

27 JUL 95

(COMPUTATION BY LARRY A. HANSON)

INTERVALS	OCTAVE	.58496	.32193		INTERVALS	OCTAVE	.58496	.32193	ET
.169925001	3	2	1		.076815597	3	2	1	
.152003093	2	1	1	7	.152003093	2	1	1	
.093109404	2	1	0		.093109404	5	3	1	5
.152003093	2	1	1		.075187496	2	1	1	
.093109404	5	3	1	10	.093109404	5	3	1	
.076815597	3	2	1		.076815597	5	3	2	5
.093109404	5	3	1		.017921908	5	3	1	
.076815597	5	3	2	12	.076815597	5	3	2	
.075187496	2	1	1		.075187496	7	4	2	7
.076815597	5	3	2		.058893689	5	3	2	
.075187496	7	4	2	17	.075187496	7	4	2	
.017921908	5	3	1		.017921908	10	6	3	10
.075187496	7	4	2		.057265588	7	4	2	
.058893689	5	3	2	22	.058893689	5	3	2	
.017921908	10	6	3		.017921908	17	10	5	17
.058893689	5	3	2		.040971781	5	3	2	
.057265588	7	4	2	29	.057265588	7	4	2	
.017921908	17	10	5		.017921908	22	13	7	22
.057265588	7	4	2		.039343680	7	4	2	
.040971781	5	3	2	34	.040971781	5	3	2	
.017921908	22	13	7		.017921908	29	17	9	29
.040971781	5	3	2		.023049873	5	3	2	
.039343680	7	4	2	41	.039343680	7	4	2	
.017921908	29	17	9		.017921908	34	20	11	34
.039343680	7	4	2		.021421772	7	4	2	
.023049873	5	3	2	46	.023049873	5	3	2	
.017921908	34	20	11		.017921908	41	24	13	41
.023049873	5	3	2		.005127965	5	3	2	
.021421772	7	4	2	53	.021421772	7	4	2	
.017921908	41	24	13		.017921908	46	27	15	46
.021421772	7	4	2		.016293807	7	4	2	
.017921908	46	27	15	58	.017921908	46	27	15	
.005127965	5	3	2		.005127965	12	7	4	12
.017921908	46	27	15		.012793943	46	27	15	
.016293807	7	4	2	65	.016293807	7	4	2	
.005127965	12	7	4		.005127965	58	34	19	58

.016293807	7	4	2		.011165842	7	4	2	
.012793943	46	27	15	111	.012793943	46	27	15	
.005127965	58	34	19		.005127965	65	38	21	65
.012793943	46	27	15		.007665978	46	27	15	
.011165842	7	4	2	118	.011165842	7	4	2	
.005127965	65	38	21		.005127965	111	65	36	111
.011165842	7	4	2		.006037877	7	4	2	
.007665978	46	27	15	164	.007665978	46	27	15	
.005127965	111	65	36		.005127965	118	69	38	118
.007665978	46	27	15		.002538013	46	27	15	
.006037877	7	4	2	171	.006037877	7	4	2	
.005127965	118	69	38		.005127965	164	96	53	164
.006037877	7	4	2		.003499864	7	4	2	
.005127965	164	96	53	217	.005127965	164	96	53	
.002538013	46	27	15		.002538013	53	31	17	53
.005127965	164	96	53		.002589952	164	96	53	
.003499864	7	4	2	224	.003499864	7	4	2	
.002538013	53	31	17		.002538013	217	127	70	217
.003499864	7	4	2		.000961852	7	4	2	
.002589952	164	96	53	388	.002589952	164	96	53	
.002538013	217	127	70		.002538013	224	131	72	224
.002589952	164	96	53		.001628101	164	96	53	
.002538013	224	131	72	395	.002538013	224	131	72	
.000961852	7	4	2		.000961852	171	100	55	171
.002538013	224	131	72		.001576161	224	131	72	
.001628101	164	96	53	559	.001628101	164	96	53	
.000961852	171	100	55		.000961852	395	231	127	395
.001628101	164	96	53		.000666249	164	96	53	
.001576161	224	131	72	783	.001576161	224	131	72	
.000961852	395	231	127		.000961852	559	327	180	559
.001576161	224	131	72		.000909912	224	131	72	
.000961852	559	327	180	947	.000961852	559	327	180	
.000666249	164	96	53		.000666249	388	227	125	388
.000961852	559	327	180		.000295603	559	327	180	
.000909912	224	131	72	1171	.000909912	224	131	72	
.000666249	388	227	125		.000666249	947	554	305	947
.000909912	224	131	72		.000614310	224	131	72	
.000666249	947	554	305	1730	.000666249	947	554	305	
.000295603	559	327	180		.000295603	783	458	252	783
.000666249	947	554	305		.000370647	947	554	305	
.000614310	224	131	72	1954	.000614310	224	131	72	
.000295603	783	458	252		.000295603	1730	1012	557	1730

.000614310	224	131	72		.000318707	224	131	72	
.000370647	947	554	305	2901	.000370647	947	554	305	
.000295603	1730	1012	557		.000295603	1954	1143	629	1954

✓ .000370647	947	554	305		.000075044	947	554	305	
.000318707	224	131	72	3125	.000318707	224	131	72	
.000295603	1954	1143	629		.000295603	2901	1697	934	2901

glitch

.000029571	20868	6718	5489		.000007203	20868	6718	5489	discontinuous
.000022368	11105	3575	2921	46032	.000022368	31973	10293	8410	31973 a-b
.000009567	<u>14059</u>	<u>4526</u>	<u>3698</u>		.000009567	<u>14059</u>	<u>4526</u>	<u>3698</u>	14059

.000022368	31973	10293	8410		.000012801	31973	10293	8410	
.000009567	14059	4526	3698	66900	.000009567	46032	14819	12108	46032
.000007203	20868	6718	5489		.000007203	20868	6718	5489	20868

.000012801	31973	10293	8410		.000003233	31973	10293	8410	
.000009567	46032	14819	12108	98873	.000009567	78005	25112	20518	78005
.000007203	20868	6718	5489		.000007203	20868	6718	5489	20868

.000009567	78005	25112	20518		.000002364	78005	25112	20518	
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.000003233	31973	10293	8410		.000003233	31973	10293	8410	

.000007203	98873	31830	26007		.000003970	98873	31830	26007	
.000003233	31973	10293	8410		.000003233	130846	42123	34417	130846
.000002364	78005	25112	20518		.000002364	78005	25112	20518	

.000003970	98873	31830	26007		.000000736	98873	31830	26007	
.000003233	130846	42123	34417		.000003233	229719	73953	60424	229719
.000002364	78005	25112	20518		.000002364	78005	25112	20518	

.000003233	229719	73953	60424		.000000869	229719	73953	60424	
.000002364	78005	25112	20518		.000002364	307724	99065	80942	307724
.000000736	98873	31830	26007		.000000736	98873	31830	26007	

.000002364	307724	99065	80942		.000001496	307724	99065	80942	
.000000869	229719	73953	60424		.000000869	537443	173018	141366	537443
.000000736	98873	31830	26007		.000000736	98873	31830	26007	

.000001496	307724	99065	80942		.000000627	307724	99065	80942	
.000000869	537443	173018	141366		.000000869	845167	272083	222308	845167
.000000736	98873	31830	26007		.000000736	98873	31830	26007	

.000000869	845167	272083	222308		.000000133	845167	272083	222308	
.000000736	98873	31830	26007		.000000736	944040	303913	248315	944040
.000000627	307724	99065	80942		.000000627	307724	99065	80942	

.000000736	944040	303913	248315		.000000110	944040	303913	248315	
.000000627	307724	99065	80942		.000000627	1251764	402978	329257	1251764
.000000133	845167	272083	222308		.000000133	845167	272083	222308	

.000000627	1251764	402978	329257		.000000494	1251764	402978	329257	
.000000133	845167	272083	222308		.000000133	2096931	675061	551565	2096931
.000000110	944040	303913	248315		.000000110	944040	303913	248315	

.000000494	1251764	402978	329257	.000000362	1251764	402978	329257	
.000000133	2096931	675061	551565	.000000133	3348695	1078039	880822	3348695
.000000110	944040	303913	248315	.000000110	944040	303913	248315	
.000000362	1251764	402978	329257	.000000229	1251764	402978	329257	
.000000133	3348695	1078039	880822	.000000133	4600459	1481017	1210079	4600459
.000000110	944040	303913	248315	.000000110	944040	303913	248315	
.000000229	1251764	402978	329257	.000000097	1251764	402978	329257	
.000000133	4600459	1481017	1210079	.000000133	5852223	1883995	1539336	5852223
.000000110	944040	303913	248315	.000000110	944040	303913	248315	
.000000133	5852223	1883995	1539336	.000000023	5852223	1883995	1539336	
.000000110	944040	303913	248315	.000000110	6796263	2187908	1787651	6796263
.000000097	1251764	402978	329257	.000000097	1251764	402978	329257	
.000000110	6796263	2187908	1787651	.000000013	6796263	2187908	1787651	
.000000097	1251764	402978	329257	.000000097	8048027	2590886	2116908	8048027
.000000023	5852223	1883995	1539336	.000000023	5852223	1883995	1539336	
.000000097	8048027	2590886	2116908	.000000074	8048027	2590886	2116908	
.000000023	5852223	1883995	1539336	.000000023	13900250	4474881	3656244	13900250
.000000013	6796263	2187908	1787651	.000000013	6796263	2187908	1787651	
.000000074	8048027	2590886	2116908	.000000051	8048027	2590886	2116908	
.000000023	13900250	4474881	3656244	.000000023	21948277	7065767	5773152	21948277
.000000013	6796263	2187908	1787651	.000000013	6796263	2187908	1787651	
.000000051	8048027	2590886	2116908	.000000028	8048027	2590886	2116908	
.000000023	21948277	7065767	5773152	.000000023	29996304	9656653	7890060	29996304
.000000013	6796263	2187908	1787651	.000000013	6796263	2187908	1787651	
.000000028	8048027	2590886	2116908	.000000005	8048027	2590886	2116908	
.000000023	29996304	9656653	7890060	.000000023	38044331	12247539	10006968	38044331
.000000013	6796263	2187908	1787651	.000000013	6796263	2187908	1787651	
.000000023	38044331	12247539	10006968	.000000010	38044331	12247539	10006968	
.000000013	6796263	2187908	1787651	.000000013	44840594	14435447	11794619	44840594
.000000005	8048027	2590886	2116908	.000000005	8048027	2590886	2116908	
.000000013	44840594	14435447	11794619	.000000003	44840594	14435447	11794619	
.000000010	38044331	12247539	10006968	.000000010	82884925	26682986	21801587	82884925
.000000005	8048027	2590886	2116908	.000000005	8048027	2590886	2116908	
.000000010	82884925	26682986	21801587	.000000005	82884925	26682986	21801587	
.000000005	8048027	2590886	2116908	.000000005	90932952	29273872	23918495	90932952
.000000003	44840594	14435447	11794619	.000000003	44840594	14435447	11794619	

ratios from highest to lowest

(A) (B) (C)

A x_1 y_1 z_1

B x_2 y_2 z_2

C x_3 y_3 z_3

SEED A,B,C WITH RATIOS
FROM HIGH TO LOW

$x_1+x_2+x_3$
NUMBER OF NOTES
IN SCALE

A 1 0 0

A-B x_1 y_1 z_1

B 0 1 0

B x_1+x_2 y_1+y_2 z_1+z_2

C 0 0 1

C x_3 y_3 z_3

SORT LARGEST TO SMALLEST AND REPEAT FORMULA

$x_1+x_2+x_3$

A 1 0 0

A-C x_1 y_1 z_1

B 0 1 0

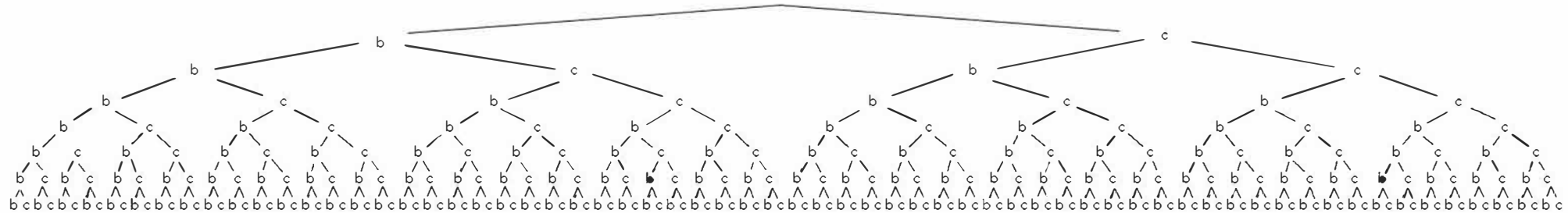
B x_2 y_2 z_2

C 0 0 1

C x_1+x_3 y_1+y_3 z_1+z_3

SORT LARGEST TO SMALLEST AND REPEAT FORMULA

unit numbers can be used
instead of ratios in other instances



viggo brun b c variation tree