Unit Lambda.2.extended

Lambda.2.1

Surprises

The transformation

$$cf(i,j) = \cfrac{i}{j+\cfrac{i+1}{j+1+\cfrac{i+2}{j+2+\cfrac{i+3}{j+3+\cfrac{i+4}{j+4+\cfrac{i+5}{j+5+\cdots}}}}}} \rightarrow scf \qquad (1)$$

is full of surprises:

cf(1,1) = [0;1,1,2,1,1,4,1,1,6,1,1,8,1,1,10,…]

$= \frac{1}{e-1}$

cf(1,2) = [0;2,1,1,4,1,1,6,1,1,8,1,1,10,…]

$= \frac{3-e}{e-2}$

cf(2,1) = 1

cf(2,2) = [0;1,2,1,1,4,1,1,6,1,1,8,1,1,10,…]

= e-2

cf(1,3) = [0;3, 2,3,1, 2,1,
3, 4,3,1, 4,1,
3, 6,3,1, 6,1,
3, 8,3,1, 8,1,
3,10,3,1,10,1,…]

= ?

cf(1,4) = [0;4,2,1,2,1,2,2,1,11,2,
11,2,11,1,1,1,1,2,2,2,2,2,1,1,2,1,1,2,2,3,11,1,2,1,
11,4,11,1,3,1,1,2,2,4,2,2,1,1,4,1,1,2,2,5,11,1,4,1.
11,6,11,1,5,1,1,2,2,6,2,2,1,1,6,1,1,2,2,7,11,1,6,1,
11,8,11,1,7,1,1,2,2,8,2,2,1,1,8,1,1,2,2,9,11,1,8,1,…]

cf(1,5) =
0.188238134527411898322660568781994485162144735325822052059708307382431398637242 90 =
[0; 5, 3, 4, 1, 47, 1, 10, 1, 47, 2, 4, 1, 4, 1, 4, 1, 1, 7, 1, 5,
47, 1, 46,
1, **47**, 7, 1, 5, 3, 1, 4, 1, 1, 2, 1, 1, 4, 1, 2, 1, 47, 3, 11, 1,
1, 1, 47, 2, 1, 1, 4, 1, 2, 1, 2, 1, 4, 1, 1, 1, 1, 6, 1, 5, 1, 1,
47, 2, 47, 2, 47, 1, 1, 6, 1, 5, 1, 1, 2, 1, 4, 1, 1, 1, 1, 1, 1,
1, 4, 1, 2, 2, 47, 1, 1, 2, 11, …] = ? =
[0; 5, 3, 4, 1, 47, 1, 10, 1, 47, 2, 4, 1, 4, 1, 4, 1, 1, 7, 1, 5,
47, 1, 46,
now periodic with k=1,2,3,4
(k,47,1,k-1,
6,1,5,1,k-1,
2,1,4,1,1,1,k-1,1,1,1,4,1,2,
k,47,1,k-1,
2,11,1,1,
k,47,1,k-1,
1,1,1,4,1,2,k,2,1,4,1,1,1,
k,6,1,5,1,
k,47,1,k-1,1,47)]

nota bene
[…,a,0,b,c,…] = […,a+b,c,…]
[…,a,0,0,b,c,…] = [a,b,c,…
→ basis for cryptocoding?

cf(1,6) = [0;6,1,1,8,1,1,10,1,1,12,1,1,…]

$$= \frac{71e-193}{106-39e}$$

cf(1,7) = [0;74,6,3,1,10,1,1,5,1,12,1,2,2,17,2,
3,4,160,3,1,3,1,3,6,6,1,1,1,6,1,2,2,92,2,3,57,
2,1,1,2,1,1440,1,3,2,3,1,17,55,1,5,1,1,5,1,6,2,
5,1,13,1,5,2,8,5,1,1,24,1,1,1,72,1,2,1,159,3,9,
1,1,1,**159**,2,2,5,2,1,1,11,1,1,1,1,1,3,6,1,1,4,57,
2,1,1,13,1,3,3,56,1,4,1,1,21,2,1,17,9,17,1,1,1,
159,2,1,1,1,54,1,1,5,1,8,1,2,5,3,1,1,3,1,4,1,5,
2,1,1,5,30,1,5,2,3,4,6,6,159,1,6,3,1,1,4,3,17,2,
7,1,2,1,9,2,57,7,,1,1,3,15,57,1,1,5,2,40,2,1,1,
12,1,1,1,7,1,4,1,2,159,1,1,1,39,3,159,1,2,5,1,
1,5,7,,2,1,19,,5,1,4,1,3,1,3,1,1,5,1,5,2,1,11,1,
1,22,1,5,2,3,1,8,12,2,3,17,2,30,8,1439,1,56,1,
1,2,57,4,1,7,1,1,1,1,1,41,2,5,3,1,8,10,2,3,6,8,
1,6,1,1,1,1,1,5,159,1,4,1,16,1,16,1,16,1,5,23,
5,1,1,6,6,4,25,2,1,1,3,4,1,1,,5,1,5,1,1,2,1,1,1,
7,2,3,2,5,2,1,1,1,2,1,1,1,1,12,1439,1,88,1,
1439,13,9,1,3,1,2,5,2,15,1,1,6,1,1,6,2,1,1,7,1,
5,1,1,14,1,1,5,1,7,1,1,3,6,8,1,1,4,1,1,5,14,1,16,
1,5,2,2,1,3,1,2,1,2,1,159,3,1,1,1,9,2,2,1,6,6,3,
1,49,2,4,3,4,2,49,1,2,6,1,1,6,1,1,57,15,14,3,
1439,1,2,1,1,3,9,2,1,1,17,5,2,12,1,1,1,1,12,2,
5,1,11,2,1,1,2,2,1,1,1,2,7,1,5,1,1,12,3,5,3,3,21,
1,2,15,5,22,2,1,159,3,159,1,1,1,159,2,1,22,1,1,

14,12,1,1,1,1,3,12,8,1,10,1,56,1,2,5,1,1,3,17,1,
1,57,11,2,5,2,1,3,2,1,1,17,5,3,8,37,1,159,33,1,
1,1,3,11,2,5,1,11,1,2,1,1,5,19,4,1,4,1,4,1,1,1,4,
1,4,1,4,17,1,5,2,5,16,6,1,1,1,1,1,159,2,1,1,…]

nonperiodic, (pseudo)chaotisch)

? insetion of zeros → „wiper“ ?

(2.1-9)

cf(1,8), cf(1,9) dito

** cf(i,j) → 2D or 3D representations?

** cf(i,j) and the three-body problem?

[3,4,5,6,7]

cf(2,1) = 1 (3.1)

cf(3,1) = $\frac{4}{3}$ (3.2)

cf(4,1) = $\frac{21}{13}$ (3.3)

cf(5,1) = $\frac{136}{73}$ (3.4)

cf(6,1) = $\frac{1045}{501}$ (3.5)

cf(n,1) = (n-1)$\frac{N(n)}{D(n)}$; n=2,3,4,5,…

$$\begin{pmatrix} N(n+1) \\ D(n+1) \end{pmatrix} = \begin{pmatrix} n-1 & 1 \\ n-1 & n \end{pmatrix} \begin{pmatrix} N(n) \\ D(n) \end{pmatrix}$$

$$\begin{pmatrix} N(2) \\ D(2) \end{pmatrix} = \begin{pmatrix} 1 \\ 1 \end{pmatrix} \qquad (3.6)$$

Lambda.2.2

Scf without or with bodyguards

0)

$\frac{I_1(2)}{I_0(2)} = [0; 1,2,3,4,5,6,7,8,9,10,\ldots]$ [1]

$= 2[0;2,1,6,2,10,3,,14,4,18,5,\ldots]$

$\tanh(1) = [0;1,3,5,7,9,11,13,15,\ldots]$

$= 2[0;2,1.5,10,3.5,18,5.5,26,7.5,34,\ldots]$

$\frac{I_1(1)}{I_0(1)} = [0; 2,4,6,8,10,12,14,16,18,..]$

$= 2[0;4,2,12,4,20,6,28,8,36,10,\ldots]$

$\tanh(0.5) = [0;2,6,10,14,18,22,26,\ldots]$

$= 2[0;4,3,20,7,36,11,52,15,68,19,\ldots]$

$??? = [0;1,2,4,8,16,32,64,128,256,512,1024,..]$

$= 2[0;2,1,8,4,32,16,128,64,512,256,2096,\ldots]$

$= 4[0; 4, \frac{1}{2}, 16,2,64,8,256,32,1024,128,4096, \ldots]$

$= 4[0;5,1,3,1,1,1,16,4,1,1,1,9,\ldots]$?

$[0;a_1,a_2,a_3,a_4, a_5,a_6,a_7,a_8,\ldots] =$

$2[0; 2a_1, \frac{1}{2}a_2, 2a_3, \frac{1}{2}a_4, 2a_5, \frac{1}{2}a_6, 2a_7, \frac{1}{2}a_8,\ldots] =$

$4[0; 4a_1, \frac{1}{4}a_2, 4a_3, \frac{1}{4}a_4, 4a_5, \frac{1}{4}a_6, 4a_7, \frac{1}{4}a_8,\ldots]$

$$\cfrac{2}{1+\cfrac{3}{2+\cfrac{4}{3+\cfrac{5}{4+\cfrac{6}{5+\cfrac{7}{6+\cfrac{8}{7+\cfrac{9}{8+\cdots}}}}}}}} = 1$$

$$\cfrac{2}{1+\cfrac{4}{3+\cfrac{6}{5+\cfrac{8}{7+\cfrac{10}{9+\cfrac{12}{11+\cfrac{14}{13+\cfrac{16}{15+\cdots}}}}}}}} = 1$$

$$\cfrac{3}{2+\cfrac{5}{4+\cfrac{7}{6+\cfrac{9}{8+\cfrac{11}{10+\cfrac{13}{12+\cfrac{15}{14+\cfrac{17}{16+\cdots}}}}}}}} = 1$$

(4.1-9)

1)

$\frac{J_1(2)-J_0(2)}{J_0(2)} = [1;1,1,2,1,3,1,4,1,5,1,6,1,\ldots]$ [2]

$\tan(1) = [1;1,1,3,1,5,1,7,1,9,1,11,1,\ldots]$

$\frac{J_1(1)}{J_0(1)-J_1(1)} = [1;2,1,4,1,6,1,8,1,10,1,12,1,\ldots]$

$\frac{\sin(0.5)}{\cos(0.5)-\sin(0.5)} =$

$[1;4,1,8.1,12,1,16,1,20,1,24,1,\ldots]$

(5.1-4)

2)

$\frac{1}{e-1} =$

$$\cfrac{1}{1+\cfrac{2}{2+\cfrac{3}{3+\cfrac{4}{4+\cfrac{5}{5+\cfrac{6}{6+\cfrac{7}{7+\cfrac{8}{8+\cdots}}}}}}}}}$$

$$[0;1,1,2,1,1,4,1,1,6,1,1,8,1,1,10,1,1,12,1,1,\ldots]$$

$$\cfrac{2}{2+\cfrac{4}{4+\cfrac{6}{6+\cfrac{8}{8+\cfrac{10}{10+\cfrac{12}{12+\cfrac{14}{14+\cfrac{16}{16+\cdots}}}}}}}}$$

$$[0;1,1,3,1,1,5,1,1,7,1,1,9,1,1,11,1,1,13,1,1,\ldots]$$

$$\cfrac{1}{1+\cfrac{3}{3+\cfrac{5}{5+\cfrac{7}{7+\cfrac{9}{9+\cfrac{11}{11+\cfrac{13}{13+\cfrac{15}{15+\cdots}}}}}}}} =$$

$$[0;1,1,3,1,1,7,1,1,11,1,1,15,1,1,19,1,1,23,1,1,\ldots]$$

$$\frac{\sqrt[4]{e}}{1+\sqrt[4]{e}} = [0;\,1,1,3,1,1,11,1,1,19,1,1,27,1,1,\ldots]$$

$$\frac{\sqrt[3]{e}}{1+\sqrt[3]{e}} = [0;\,1,1,2,1,1,8,1,1,14,1,1,20,1,1,\ldots]$$

$$\frac{2-\sqrt{e}}{\sqrt{e}-1} = \cfrac{2}{3+\cfrac{4}{5+\cfrac{6}{7+\cfrac{8}{9+\cfrac{10}{11+\cfrac{12}{13+\cdots}}}}}}$$

$$= [0;1,1,5,1,1,9,1,1,13,1,1,17,1,1\ldots]$$

$$\cfrac{3}{5+\cfrac{7}{9+\cfrac{11}{13+\cfrac{15}{17+\cfrac{19}{21+\cfrac{23}{25+\cfrac{27}{29+\cfrac{31}{33+\cdots}}}}}}}}$$

$[0;1,1,9=3^2,1,1,17,1,1,25=5^2,1,1,33,1,1,41,1,1,$
$49=7^2,1,1,57,1,1,65,1,1,73,1,1,81=9^2,1,1,89,1,1,$
$97,1,1,105,1,1,113,1,1,121=11^2,1,1,\ldots]$

(6.1-7)

3)

$[0;1,1,1,3,1,1,1,5,1,1,1,7,1,1,1,9,1,1,1,11,1,1,1,\ldots]$
$= ???$ (7)

Lambda 2.3

Flatworms

$$\tanh(x) = \left[0;\frac{1}{x},\frac{3}{x},\frac{5}{x},\frac{7}{x},\frac{9}{x},\frac{11}{x},\frac{13}{x},\frac{15}{x},\ldots\right]$$

$$= \frac{1}{2}\left[0;\frac{1}{2x},\frac{6}{x},\frac{5}{2x},\frac{14}{x},\frac{9}{2x},\frac{22}{x},\frac{13}{2x},\frac{30}{x},\ldots\right]$$

$$= 2\left[0;\frac{2}{x},\frac{3}{2x},\frac{10}{x},\frac{7}{2x},\frac{18}{x},\frac{11}{2x},\frac{26}{x},\frac{15}{2x},\ldots\right]$$

$$\tan(x) = [0; \frac{1}{x}, -\frac{3}{x}, \frac{5}{x}, -\frac{7}{x}, \frac{9}{x}, -\frac{11}{x}, \frac{13}{x}, -\frac{15}{x}, \dots]$$

$$\frac{I_1(2x)}{I_0(2x)} = \left[0; \frac{1}{x}, \frac{2}{x}, \frac{3}{x}, \frac{4}{x}, \frac{5}{x}, \frac{6}{x}, \frac{7}{x}, \frac{8}{x}, \dots\right]$$

$$= \frac{1}{2}[0; \frac{1}{2x}, \frac{4}{x}, \frac{3}{2x}, \frac{8}{x}, \frac{5}{2x}, \frac{12}{x}, \frac{7}{2x}, \frac{16}{x}, \dots]$$

$$= 2[0; \frac{2}{x}, \frac{1}{x}, \frac{6}{x}, \frac{2}{x}, \frac{10}{x}, \frac{3}{x}, \frac{14}{x}, \frac{4}{x}, \frac{18}{x} \dots]$$

$$\frac{J_1(2x)}{J_0(2x)} = [0; \frac{1}{x}, -\frac{2}{x}, \frac{3}{x}, -\frac{4}{x}, \frac{5}{x}, -\frac{6}{x}, \frac{7}{x}, -\frac{8}{x}, \dots]$$

$e^x =$

$$[0;1, -\frac{1}{x}, -2, +\frac{3}{x}, +2, -\frac{5}{x}, -2, +\frac{7}{x}, +2, -\frac{9}{x}, -2, +\frac{11}{x}, +2, \dots]$$

Examine the functions

$$f_1(x) = \left[0; \frac{1}{x}, \frac{5}{x}, \frac{9}{x}, \frac{13}{x}, \frac{17}{x}, \frac{21}{x}, \frac{25}{x}, \frac{29}{x}, \dots\right]$$

$$f_2(x) = \left[0; \frac{1}{x}, -\frac{5}{x}, \frac{9}{x}, -\frac{13}{x}, \frac{17}{x}, -\frac{21}{x}, \frac{25}{x}, \dots\right]$$

$$f_3(x) = \left[0; \frac{1}{x}, \frac{4}{x}, \frac{9}{x}, \frac{16}{x}, \frac{25}{x}, \frac{36}{x}, \frac{49}{x}, \frac{64}{x}, \dots\right]$$

$$f_4(x) = \left[0; \frac{1}{x}, -\frac{4}{x}, \frac{9}{x}, -\frac{16}{x}, \frac{25}{x}, -\frac{36}{x}, \frac{49}{x}, \dots\right]$$

(8.1-9)

(graph, curve sketching, compact formula expression).

Lambda 2.4

2.4.1

Extension of equs (1,2,3)

cf(i,j) → as decimal value → scf

i=1,j=1:
0.58197670686932642438500200510901155854686930107539613626678705964804381739166974
= [0; 1, 1, 2, 1, 1, 4, 1, 1, 6, 1, 1, 8, 1, 1, 10, 1, 1, 12, 1, 1, 14, 1, 1, 16,
1, 1, 18, 1, 1, 20, 1, 1, 22, 1, 1, 24, 1, 1, 26, 1, 1, 28, 1, 1, 30, 1, 1, 32, 1,
1, 34, 1, 1, 36, 1, 1, 38, 1, 1, 40, 1, 1, 42, 1, 1, 44, 1, 1, 46, 1, 1, 48, 1, 1,
50, 1, 1, 52, 1, 1, 54, 1, 1, 56, 1, 1, 58, 1, 1, 60, 1, 1, 62, 1, 1, 64, 1, 1, 66, …]
i=2,j=1:
1
i=3,j=1:
1.3333333333333333333333333333333333333333333333333333333333333333333333333333333
[1; 3]
i=4,j=1:
1.6153846153846153846153846153846153846153846153846153846153846153846153846153846
[1; 1, 1, 1, 1, 2]
i=5,j=1:
1.8630136986301369863013698630136986301369863013698630136986301369863013698630137
[1; 1, 6, 3, 3]
i=6,j=1:
2.0858283433133732534930139720558882235528942115768463073852295409181636726546906
[2; 11, 1, 1, 1, 6, 2]
i=7,j=1:
2.2898049864231054060725746729202666008392989385336953838558380646753887928906443
[2; 3, 2, 4, 1, 1, 3, 1, 1, 1, 4]
i=8,j=1:
2.4789147822389923737145590306380038795737783328461722424467887226636196954800308
[2; 2, 11, 2, 1, 4, 10, 11]
i=9,j=1:
2.6559351646874754344457884179909877698407264557388938336972205105577997377983685
[2; 1, 1, 1, 9, 1, 2, 5, 8, 1, 4, 1, 6, 2]
i=10,j=1:
2.8222889456512303893809121748405816271453848133590540563765935038712704933457745 4
[2; 1, 4, 1, 1, 1, 4, 1, 3, 6, 14, 1, 7, 3, 5]
i=1,j=2:
0.39221119117733281437655287847981652837397838531528712359132456708327957046161093
[0, 2, 1, 1, 4, 1, 1, 6, 1, 1, 8, 1, 1, 10, 1, 1, 12, 1, 1, 14, 1, 1, 16, 1, 1, 18,
1, 1, 20, 1, 1, 22, 1, 1, 24, 1, 1, 26, 1, 1, 28, 1, 1, 30, 1, 1, 32, 1, 1, 34,
1, 1, 36, 1, 1, 38, 1, 1, 40, 1, 1, 42, 1, 1, 44, 1, 1, 46, 1, 1, 48, 1, 1, 50, 1,
1, 52, 1, 1, 54, 1, 1, 56, 1, 1, 58, 1, 1, 60, 1, 1, 62, 1, 1, 64, 1, 1, 66, …]
i=2,j=2:
0.71828182845904523536028747135266249775724709369995957496696762772407663035354759
[0; 1, 2, 1, 1, 4, 1, 1, 6, 1, 1, 8, 1, 1, 10, 1, 1, 12, 1, 1, 14, 1, 1, 16, 1,
1, 18, 1, 1, 20, 1, 1, 22, 1, 1, 24, 1, 1, 26, 1, 1, 28, 1, 1, 30, 1, 1, 32, 1, 1,
34, 1, 1, 36, 1, 1, 38, 1, 1, 40, 1, 1, 42, 1, 1, 44, 1, 1, 46, 1, 1, 48, 1, 1, 50,

1, 1, 52, 1, 1, 54, 1, 1, 56, 1, 1, 58, 1, 1, 60, 1, 1, 62, 1, 1, 64, 1, 1, …]
i=3,j=2:
1
i=4,j=2:
1.25
[1; 4]
i=5,j=2:
1.4761904761904761904761904761904761904761904761904761904761904761904761904761905
[1, 2, 10]
i=6,j=2:
1.6838235294117647058823529411764705882352941176470588235294117647058823529411765
[1; 1, 2, 6, 7]
I=7,j=2:
1.8765550239234449760765550239234449760765550239234449760765550239234449760765550
[1; 1, 7, 9, 1, 12]
i=8,j=2:
2.0570288917636912462268219059939629150495903406640793445450625269512721000431220
[2; 17, 1, 1, 6, 1, 1, 1, 5, 2]
000 751 517 968 462 659,
1, 3, 262, 1, 4, 1, 2, 26, 1, 3, 1, 1, 9, 2, 3, 9, 1, 1, 10, 3□
i=9,j=2:
2.2272186431412063587346846895132330714232117398621488063973244433963275412964015
[2, 4, 2, 2, 37, 1, 3, 1, 4, 1, 3]
i=10,j=2:
2.3886369364965399245352194436381967889277585127022196422297245688272406471028551
[2; 2, 1, 1, 2, 1, 11, 1, 1, 8, 2, 65, 2]
i=1,j=3:
0.29061669278536242210753341456184502578206873869073466505713149509941880304870108
[0, 3, 2, 3, 1, 2, 1, 3, 4, 3, 1, 4, 1, 3, 6, 3, 1, 6, 1, 3, 8, 3, 1, 8, 1, 3, 10,
3, 1, 10, 1, 3, 12, 3, 1, 12, 1, 3, 14, 3, 1, 14, 1, 3, 16, 3, 1, 16, 1, 3, 18,
3, 1, 18, 1, 3, 20, 3, 1, 20, 1, 3, 22, 3, 1, 22, 1, 3, 24, 3, 1, 24, 1, 3, 26,
3, 1, 26, 1, 3, 28, 3, 1, 28, 1, 3, 30, 3, 1, 30, 1, 3, 32, 3, 1, 32, 1, 3, …]
i=2,j=3:
0.54964677830384488222639268479769560048642528335396455920074802268403460617179068
[0; 1, 1, 4, 1, 1, 6, 1, 1, 8, 1, 1, 10, 1, 1, 12, 1, 1, 14, 1, 1, 16, 1, 1, 18,
1, 1, 20, 1, 1, 22, 1, 1, 24, 1, 1, 26, 1, 1, 28, 1, 1, 30, 1, 1, 32, 1, 1, 34, 1,
1, 36, 1, 1, 38, 1, 1, 40, 1, 1, 42, 1, 1, 44, 1, 1, 46, 1, 1, 48, 1, 1, 50, 1, 1,
52, 1, 1, 54, 1, 1, 56, 1, 1, 58, 1, 1, 60, 1, 1, 62, 1, 1, 64, 1, 1, 66, …]
i=3,j=3:
0.78442238235466562875310575695963305674795677063057424718264913416655914092322185
[0; 1, 3, 1, 1, 1, 3, 3, 3, 1, 3, 1, 3, 5, 3, 1, 5, 1, 3, 7, 3, 1, 7, 1, 3, 9, 3,
1, 9, 1, 3, 11, 3, 1, 11, 1, 3, 13, 3, 1, 13, 1, 3, 15, 3, 1, 15, 1, 3, 17, 3, 1,
17, 1, 3, 19, 3, 1, 19, 1, 3, 21, 3, 1, 21, 1, 3, 23, 3, 1, 23, 1, 3, 25, 3, 1,
25, 1, 3, 27, 3, 1, 27, 1, 3, 29, 3, 1, 29, 1, 3, 31, 3, 1, 31, 1, 3, 33, …]
i=4,j=3:
1
i=5,j=3:
1.2
[1; 5]
i=6,j=3:
1.3870967741935483870967741935483870967741935483870967741935483870967741935483871
[1; 2, 1, 1, 2, 2]
i=7,j=3:
1.5633187772925764192139737991266375545851528384279475982532751091703056768558952
[1; 1, 1, 3, 2, 4, 3]
i=8,j=3:
1.7302396736359000509943906170321264660887302396736359000509943906170321264660887
[1; 1, 2, 1, 2, 2, 2, 2, 1, 2, 3]
i=9,j=3:
1.8891043446360253655468790943870866306797337665740789266809915622870918714952047
[1; 1, 8, 57, 5, 3, 2]
i=10,j=3:

2.040914450727950908434604740705089640235832029839971122608591023944170376609313 0
[2; 24, 2, 3, 1, 3, 12, 1, 8, 2]
i=1,j=4:
0.22902536539711983767523123810332605392203242787676723636312613044916575983886885
[0; 4, 2, 1, 2, 1, 2, 2, 1, 11, 2, 11, 2, 11, 1, 1, 1, 1, 2, 2, 2, 2, 2, 1,
1, 2, 1, 1, 2, 2, 3, 11, 1, 2, 1, 11, 4, 11, 1, 3, 1, 1, 2, 2, 4, 2, 2, 1, 1,
4, 1, 1, 2, 2, 5, 11, 1, 4, 1, 11, 6, 11, 1, 5, 1, 1, 2, 2, 6, 2, 2, 1, 1, 6,
1, 1, 2, 2, 7, 11, 1, 6, 1, 11, 8, 11, 1, 7, 1, 1, 2, 2, 8, 2, 2, 1, 1, 8, …]
i=2,j=4:
0.44095857129087561866308846805417749095618050650268374759906335077256943832260375
[0; 2, 3, 1, 2, 1, 3, 4, 3, 1, 4, 1, 3, 6, 3, 1, 6, 1, 3, 8, 3, 1, 8, 1, 3, 10, 3,
1, 10, 1, 3, 12, 3, 1, 12, 1, 3, 14, 3, 1, 14, 1, 3, 16, 3, 1, 16, 1, 3, 18, 3,
1, 18, 1, 3, 20, 3, 1, 20, 1, 3, 22, 3, 1, 22, 1, 3, 24, 3, 1, 24, 1, 3, 26, 3,
1, 26, 1, 3, 28, 3, 1, 28, 1, 3, 30, 3, 1, 30, 1, 3, 32, 3, 1, 32, 1, 3, 34, …]
i=3,j=4:
0.63870048719615978356697498413776807189604323716902298181750150726555434645182513
[0; 1, 1, 1, 3, 3, 3, 1, 3, 1, 3, 5, 3, 1, 5, 1, 3, 7, 3, 1, 7, 1, 3, 9, 3, 1, 9,
1, 3, 11, 3, 1, 11, 1, 3, 13, 3, 1, 13, 1, 3, 15, 3, 1, 15, 1, 3, 17, 3, 1, 17,
1, 3, 19, 3, 1, 19, 1, 3, 21, 3, 1, 21, 1, 3, 23, 3, 1, 23, 1, 3, 25, 3, 1, 25,
1, 3, 27, 3, 1, 27, 1, 3, 29, 3, 1, 29, 1, 3, 31, 3, 1, 31, 1, 3, 33, 3, 1, 33, …]
i=4,j=4:
0.82447016745576732333958902719654340072963792503094683880112203402605190925768603
[0; 1, 4, 1, 2, 3, 3, 13, 3, 1, 1, 11, 1, 1, 3, 1, 21, 1, 3, 2, 1, 1, 2, 2, 2,
1, 3, 31, 3, 1, 3, 11, 1, 3, 3, 1, 39, 1, 3, 4, 1, 1, 2, 2, 4, 1, 3, 49, 3, 1,
5, 11, 1, 5, 3, 1, 57, 1, 3, 6, 1, 1, 2, 2, 6, 1, 3, 67, 3, 1, 7, 11, 1, 7, 3,
1, 75, 1, 3, 8, 1, 1, 2, 2, 8, 1, 3, 85, 3, 1, 9, 11, 1, 9, 3, 1, 93, 1, 3, …]
i=5,j=4:
1
i=6,j=4:
1.16666666666666666666666666666666666666666666666666666666666666666666666666666667
[1, 5, 6]
i=7,j=4:
1.32558139534883720930232558139534883720930232558139534883720930232558139534883 72
[1; 3, 14]
i=8,j=4:
1.47765363128491620111731843575418994413407821229050279329608938547486033519553 07
[1; 2, 10, 1, 2, 5]
i=9,j=4:
1.62363689949896846448570586501620984379605069260241674034777483053345122310639 55
[1; 1, 1, 1, 1, 1, 10, 1, 5, 6]
i=10,j=4:
1.76416245908006436220385063529933973256394606891194584697331187926538312156688 68
[1; 1, 3, 4, 6, 7, 1, 1, 3, 6]
i=1,j=5:
0.18823813452741189832266056878199448516214473532582205205970830738243139863724290
[0; 5, 3, 4, 1, 47, 1, 10, 1, 47, 2, 4, 1, 4, 1, 4, 1, 1, 7, 1, 5, 47, 1,
46, 1, 47, 7, 1, 5, 3, 1, 4, 1, 1, 2, 1, 1, 4, 1, 2, 1, 47, 3, 11, 1, 1, 1, 47,
2, 1, 1, 4, 1, 2, 1, 2, 1, 4, 1, 1, 1, 1, 6, 1, 5, 1, 1, 47, 2, 47, 2, 47, 1, 1,
6, 1, 5, 1, 1, 2, 1, 4, 1, 1, 1, 1, 1, 1, 1, 4, 1, 2, 2, 47, 1, 1, 2, 11, …]
i=2,j=5:
0.36632858664386060659817414255199285255825946937790420918599784305261927886192632
[0; 2, 1, 2, 1, 2, 2, 1, 11, 2, 11, 2, 11, 1, 1, 1, 1, 2, 2, 2, 2, 2, 1, 1,
2, 1, 1, 2, 2, 3, 11, 1, 2, 1, 11, 4, 11, 1, 3, 1, 1, 2, 2, 4, 2, 2, 1, 1, 4,
1, 1, 2, 2, 5, 11, 1, 4, 1, 11, 6, 11, 1, 5, 1, 1, 2, 2, 6, 2, 2, 1, 1, 6, 1,
1, 2, 2, 7, 11, 1, 6, 1, 11, 8, 11, 1, 7, 1, 1, 2, 2, 8, 2, 2, 1, 1, 8, …]
i=3,j=5:
0.53557347608674162532918390675873958066858182912027748209769687906209929824192571
[0; 1, 1, 6, 1, 1, 8, 1, 1, 10, 1, 1, 12, 1, 1, 14, 1, 1, 16, 1, 1, 18, 1, 1, 20,
1, 1, 22, 1, 1, 24, 1, 1, 26, 1, 1, 28, 1, 1, 30, 1, 1, 32, 1, 1, 34, 1, 1, 36, 1,
1, 38, 1, 1, 40, 1, 1, 42, 1, 1, 44, 1, 1, 46, 1, 1, 48, 1, 1, 50, 1, 1, 52, 1, 1,
54, 1, 1, 56, 1, 1, 58, 1, 1, 60, 1, 1, 62, 1, 1, 64, 1, 1, 66, 1, 1, 68, 1, 1, …]
i=4,j=5:

0.697037281386369419626318834135667861195759791979710300732621418409721875340078 33
[0; 1, 2, 3, 3, 13, 3, 1, 1, 11, 1, 1, 3, 1, 21, 1, 3, 2, 1, 1, 2, 2, 2, 1, 3,
31, 3, 1, 3, 11, 1, 3, 3, 1, 39, 1, 3, 4, 1, 1, 2, 2, 4, 1, 3, 49, 3, 1, 5, 11,
1, 5, 3, 1, 57, 1, 3, 6, 1, 1, 2, 2, 6, 1, 3, 67, 3, 1, 7, 11, 1, 7, 3, 1, 75,
1, 3, 8, 1, 1, 2, 2, 8, 1, 3, 85, 3, 1, 9, 11, 1, 9, 3, 1, 93, 1, 3, 10, 1, …]
i=5,j=5:
0.851600649594879711422633312183690762528057649558697309090002009687405795269100 18
[0; 1, 5, 1, 2, 1, 4, 1, 2, 1, 1, 3, 48, 4, 2, 5, 5, 5, 1, 1, 10, 2, 4, 1, 7,
15, 48, 16, 1, 9, 5, 4, 8, 1, 1, 1, 2, 2, 4, 1, 11, 1, 1, 3, 2, 1, 47, 2, 1, 3,
2, 14, 5, 3, 1, 2, 1, 1, 9, 1, 1, 2, 4, 1, 16, 15, 1, 1, 47, 1, 1, 15, 1, 18,
5, 3, 1, 1, 8, 1, 1, 1, 1, 1, 1, 2, 4, 1, 20, 1, 1, 3, 2, 2, 47, 1, 1, 1, 1, …]
i=6,j=5:
1
i=7,j=5:
1.142857142857142857142857142857142857142857142857142857142857142857142857142857 1
[1, 7]
i=8,j=5:
1.280701754385964912280701754385964912280701754385964912280701754385964912280701 8
[1; 3, 1, 1, 3, 2]
i=9,j=5:
1.413988657844990548204158790170132325141776937618147448015122873345935727788279 8
[1; 2, 2, 2, 2, 5, 1, 2]
i=10,j=5:
1.543111272463241967689235795970230531856961335995643492466872390633508803775639 9
[1; 1, 1, 5, 3, 2, 1, 8, 1, 4]
i=1,j=6:
0.159441842083972585306850648171595021701692723212874799962170236316661955247122 87
[0; 6, 3, 1, 2, 9, 2, 1, 1, 1, 1, 3, 1, 8, 1, 8, 7, 26, 1, 1, 1, 5, 1, 239, 1,
8, 1, 1, 2, 9, 4, 2, 3, 3, 4, 1, 2, 1, 14, 1, 2, 1, 4, 1, 1, 9, 15, 2, 3, 239,
1, 25, 1, 1, 1, 26, 37, 4, 3, 9, 3, 2, 1, 8, 1, 8, 1, 8, 1, 2, 2, 2, 3, 2, 1, 16,
9, 12, 8, 239, 1, 58, 1, 239, 9, 16, 8, 12, 2, 2, 3, 2, 1, 6, 1, 8, 1, 2, 1, …]
i=2,j=6:
0.312419837301227013448827838442755031559062620443182935738768229614359670640131 02
[0; 3, 4, 1, 47, 1, 10, 1, 47, 2, 4, 1, 4, 1, 4, 1, 1, 7, 1, 5, 47, 1, 46,
1, 47, 7, 1, 5, 3, 1, 4, 1, 1, 2, 1, 1, 4, 1, 2, 1, 47, 3, 11, 1, 1, 1, 47, 2,
1, 1, 4, 1, 2, 1, 2, 1, 4, 1, 1, 1, 1, 6, 1, 5, 1, 1, 47, 2, 47, 2, 47, 1, 1, 6,
1, 5, 1, 1, 2, 1, 4, 1, 1, 1, 1, 1, 1, 1, 1, 4, 1, 2, 2, 47, 1, 1, 2, 11, 1, 1, …]
i=3,j=6:
0.459579385608722069565931476946415346874711190266825353181926311538538287265995 19
[0; 2, 5, 1, 2, 5, 1, 2, 1, 5, 4, 5, 1, 4, 5, 1, 4, 1, 5, 6, 5, 1, 6, 5, 1, 6, 1,
5, 8, 5, 1, 8, 5, 1, 8, 1, 5, 10, 5, 1, 10, 5, 1, 10, 1, 5, 12, 5, 1, 12, 5, 1,
12, 1, 5, 14, 5, 1, 14, 5, 1, 14, 1, 5, 16, 5, 1, 16, 5, 1, 16, 1, 5, 18, 5, 1,
18, 5, 1, 18, 1, 5, 20, 5, 1, 20, 5, 1, 20, 1, 5, 22, 5, 1, 22, 5, 1, 22, 1, …]
i=4,j=6:
0.601472316963880390129931318248099410503945447998580802706114258316154629470147 39
[0; 1, 1, 1, 1, 26, 1, 1, 3, 5, 1, 3, 1, 1, 44, 1, 1, 5, 5, 1, 5, 1, 1, 62, 1, 1,
7, 5, 1, 7, 1, 1, 80, 1, 1, 9, 5, 1, 9, 1, 1, 98, 1, 1, 11, 5, 1, 11, 1, 1, 116, 1,
1, 13, 5, 1, 13, 1, 1, 134, 1, 1, 15, 5, 1, 15, 1, 1, 152, 1, 1, 17, 5, 1, 17, 1,
1, 170, 1, 1, 19, 5, 1, 19, 1, 1, 188, 1, 1, 21, 5, 1, 21, 1, 1, 206, 1, 1, 23, …]
i=5,j==6:
0.738573971315015652972394997147706385664828421253432085780375869808175012139717 82
[0; 1, 2, 1, 4, 1, 2, 1, 1, 3, 48, 4, 2, 5, 5, 5, 1, 1, 10, 2, 4, 1, 7, 15,
48, 16, 1, 9, 5, 4, 8, 1, 1, 1, 2, 2, 4, 1, 11, 1, 1, 3, 2, 1, 47, 2, 1, 3, 2,
14, 5, 3, 1, 2, 1, 1, 9, 1, 1, 2, 4, 1, 16, 15, 1, 1, 47, 1, 1, 15, 1, 18, 5, 3,
1, 1, 8, 1, 1, 1, 1, 1, 1, 2, 4, 1, 20, 1, 1, 3, 2, 2, 47, 1, 1, 1, 1, 3, 2, …]
i=6,j=6:
0.871296601732961774532898542669584826494699739974637875915776773012152344175097 92
[0; 1, 6, 1, 3, 2, 1, 9, 1, 1, 1, 9, 22, 3, 1, 1, 3, 3, 2, 2, 1, 1, 2,
26, 2, 1, 1, 1, 2, 2, 2, 9, 4, 1, 2, 1, 1, 2, 1, 1, 1, 1, 3, 4, 2, 1, 3, 15, 3,
1, 2, 2, 8, 1, 5, 1, 1, 9, 13, 1, 7, 1, 2, 26, 2, 1, 8, 1, 1, 11, 3, 1, 2, 3,
77, 1, 1, 9, 9, 1, 2, 2, 1, 1, 3, 4, 4, 1, 8, 1, 1, 2, 1, 1, 1, 1, 1, 1, 4, 3, …]
i=7,j=6:

1
i=8,j=6:
1.125
[1; 8]
i=9,j=6:
1.246575342465753424657534246575342465753424657534246575342465753424657534246575342465753
[1, 4, 18]
i=10,j=6:
1.3649732620320855614973262032085561497326203208556149732620320855614973262032086
[1; 2, 1, 2, 1, 5, 2, 5]
i=1,j=7:
0.1381140537326221409501709982980701420641425390914582055287828423569751307407866‌0
[0, 7, 4, 6, 3, 1, 10, 1, 1, 5, 1, 12, 1, 2, 2, 17, 2, 3, 4, 160, 3, 1, 3, 1,
3, 6, 6, 1, 1, 1, 6, 1, 2, 2, 92, 2, 3, 57, 2, 1, 1, 2, 1, 1440, 1, 3, 2, 3, 1,
17, 55, 1, 5, 1, 1, 5, 1, 6, 2, 5, 1, 13, 1, 5, 2, 8, 5, 1, 1, 24, 1, 1, 1, 72,
1, 2, 1, 159, 3, 9, 1, 1, 1, 159, 2, 2, 5, 2, 1, 1, 11, 1, 1, 1, 1, 1, 3, 6, …]
i=2,j=7:
0.27187936949031280390750911931343071300175140450416150234703123446379952680723583
[0; 3, 1, 2, 9, 2, 1, 1, 1, 1, 3, 1, 8, 1, 8, 7, 26, 1, 1, 1, 5, 1, 239, 1, 8,
1, 1, 2, 9, 4, 2, 3, 3, 4, 1, 2, 1, 14, 1, 2, 1, 4, 1, 1, 9, 15, 2, 3, 239, 1,
25, 1, 1, 1, 26, 37, 4, 3, 9, 3, 2, 1, 8, 1, 8, 1, 8, 1, 2, 2, 2, 3, 2, 1, 16, 9,
12, 8, 239, 1, 58, 1, 239, 9, 16, 8, 12, 2, 2, 3, 2, 1, 6, 1, 8, 1, 2, 1, 2, …]□
i=3,j=7:
0.40164215331708419330675048147906901046163124507339730113703541633352503800903367
[0, 2, 2, 23, 1, 22, 1, 23, 4, 2, 2, 2, 2, 2, 3, 1, 3, 2, 2, 1, 1, 23, 2, 23,
2, 23, 1, 1, 3, 2, 2, 1, 1, 1, 2, 2, 3, 2, 3, 2, 2, 1, 2, 23, 1, 1, 1, 23, 3,
23, 1, 2, 3, 2, 2, 1, 2, 1, 2, 2, 3, 3, 3, 2, 2, 1, 3, 23, 1, 2, 1, 23, 4, 23,
1, 3, 3, 2, 2, 1, 3, 1, 2, 2, 3, 4, 3, 2, 2, 1, 4, 23, 1, 3, 1, 23, 5, 23, 1, …]
i=4,j=7:
0.52770793021197005866446030277017358925536710835433313604561901614949180604779695
[0; 1, 1, 8, 1, 1, 10, 1, 1, 12, 1, 1, 14, 1, 1, 16, 1, 1, 18, 1, 1, 20, 1, 1, 22,
1, 1, 24, 1, 1, 26, 1, 1, 28, 1, 1, 30, 1, 1, 32, 1, 1, 34, 1, 1, 36, 1, 1, 38, 1,
1, 40, 1, 1, 42, 1, 1, 44, 1, 1, 46, 1, 1, 48, 1, 1, 50, 1, 1, 52, 1, 1, 54, 1, 1,
56, 1, 1, 58, 1, 1, 60, 1, 1, 62, 1, 1, 64, 1, 1, 66, 1, 1, 68, 1, 1, 70, 1, 1, …]
i=5,j=7:
0.65034763393808523699383818527639857245498492957378867420689832164786281433249577
[0; 1, 1, 1, 6, 7, 24, 8, 1, 10, 2, 1, 1, 2, 3, 1, 4, 1, 2, 1, 1, 1, 15, 7,
1, 1, 23, 1, 1, 7, 1, 19, 2, 1, 1, 1, 1, 1, 3, 1, 4, 2, 2, 1, 1, 1, 24, 7, 1, 2,
23, 1, 2, 7, 1, 28, 2, 1, 1, 1, 2, 1, 3, 1, 4, 3, 2, 1, 1, 1, 33, 7, 1, 3, 23,
1, 3, 7, 1, 37, 2, 1, 1, 1, 3, 1, 3, 1, 4, 4, 2, 1, 1, 1, 42, 7, 1, 4, 23, 1, …]
i=6,j=7:
0.76980261177848387748879364500445613058314153375508561466345691170422896379445513
[0, 1, 3, 2, 1, 9, 1, 1, 1, 9, 22, 3, 1, 1, 3, 3, 2, 2, 1, 1, 2, 26, 2,
1, 1, 1, 2, 2, 2, 9, 4, 1, 2, 1, 1, 2, 1, 1, 1, 1, 3, 4, 2, 1, 3, 15, 3, 1, 2,
2, 8, 1, 5, 1, 1, 9, 13, 1, 7, 1, 2, 26, 2, 1, 8, 1, 1, 11, 3, 1, 2, 3, 77, 1,
1, 9, 9, 1, 2, 2, 1, 1, 3, 4, 4, 1, 8, 1, 1, 2, 1, 1, 1, 1, 1, 1, 4, 3, 1, …]
i=7,j=7:
0.88628876557801878356687399657724766279779410550411850293645104376981001456766138
[0; 1, 7, 1, 3, 1, 6, 9, 1, 1, 1, 32, 1, 11, 1, 1, 1, 1, 17, 1, 1, 2, 4,
15, 1, 3, 1, 1, 1, 1, 5, 1, 4, 4, 1, 6, 1, 2, 1, 1, 1, 4, 1, 1, 5, 1, 9, 1, 1,
18, 1, 5, 4, 3, 14, 9, 3, 1, 8, 1, 16, 1, 8, 1, 2, 2, 1, 1, 1, 2, 1, 1, 1, 3, 1,
466, 6, 2, 2, 19, 2, 1, 26, 4, 2, 3, 4, 2, 2, 1, 4, 1, 5, 5, 1, 28, 1, 1, 39, …]
i=8,j=7:
1
i=9,j=7:
1.1111111111111111111111111111111111111111111111111111111111111111111111111111111
[1, 9]
i=10,j=7:
1.2197802197802197802197802197802197802197802197802197802197802197802197802197802
[1, 4, 1, 1, 4, 2]
i=1,j=8:
0.12172426098293840297208800555302246098471280732706716619388718715020128990948535

[0; 8, 4, 1, 1, 1, 4, 2, 3, 1, 3, 1, 3, 1, 1, 2, 16, 2, 2, 25, 1, 2, 1, 22, 5,
1, 1, 5, 1, 44, 19, 10, 1, 4, 13, 16, 3, 7, 1, 10, 2, 4, 1, 205, 9, 30, 1, 1, 1,
1, 2, 1, 7, 3, 1, 3, 1, 3, 9, 11, 1, 101, 1, 11, 4, 4, 1, 3, 1, 2, 1, 4, 4, 10, 4,
1120, 3, 1, 10, 1, 1, 22, 2, 1, 9, 1, 9, 1, 1, 1, 1, 11, 3, 1, 1, 1, 3, 1, 2, 1, …]
i=2,j=8:
0.240392798374600785443608679131807420086590109975332244472582432098572582801306 38
[0, 4, 6, 3, 1, 10, 1, 1, 5, 1, 12, 1, 2, 2, 17, 2, 3, 4, 160, 3, 1, 3, 1, 3,
6, 6, 1, 1, 1, 6, 1, 2, 2, 92, 2, 3, 57, 2, 1, 1, 2, 1, 1440, 1, 3, 2, 3, 1, 17,
55, 1, 5, 1, 1, 5, 1, 6, 2, 5, 1, 13, 1, 5, 2, 8, 5, 1, 1, 24, 1, 1, 1, 72, 1, 2,
1, 159, 3, 9, 1, 1, 1, 159, 2, 2, 5, 2, 1, 1, 11, 1, 1, 1, 1, 1, 3, 6, 1, 1, 4, …]
i=3,j=8:
0.356203612467407119282221106530538648246586193634074057963495924968924639954306 94
[0; 2, 1, 4, 5, 4, 1, 1, 2, 4, 2, 4, 14, 13, 3, 12, 1, 119, 2, 4, 3, 2, 1, 4,
8, 1, 6, 1, 1, 1, 1, 1, 6, 1, 6, 1, 6, 1, 1, 1, 3, 4, 1, 1, 7, 4, 1, 1, 1, 119, 2,
12, 1, 4, 1, 12, 1, 1, 18, 8, 1, 1, 1, 4, 6, 1, 2, 4, 2, 4, 2, 4, 2, 1, 4, 1, 6,
1, 2, 8, 18, 6, 16, 119, 1, 118, 1, 119, 18, 8, 16, 6, 4, 1, 6, 1, 2, 3, 2, 4,…]
i=4,j=8:
0.469335514770014126882962467573229617796915732592613743209505424704089144317155 79
[0; 2, 7, 1, 1, 1, 7, 3, 7, 1, 2, 1, 7, 4, 7, 1, 3, 1, 7, 5, 7, 1, 4, 1, 7,
6, 7, 1, 5, 1, 7, 7, 7, 1, 6, 1, 7, 8, 7, 1, 7, 1, 7, 9, 7, 1, 8, 1, 7, 10, 7, 1,
9, 1, 7, 11, 7, 1, 10, 1, 7, 12, 7, 1, 11, 1, 7, 13, 7, 1, 12, 1, 7, 14, 7, 1,
13, 1, 7, 15, 7, 1, 14, 1, 7, 16, 7, 1, 15, 1, 7, 17, 7, 1, 16, 1, 7, 18, 7, …]
i=5,j=8:
0.579950519965234260567702513632574558129691939876345661827728986633519615951260 73
[0; 1, 1, 2, 1, 1, 1, 2, 7, 1, 2, 2, 1, 1, 1, 3, 7, 1, 3, 2, 1, 1, 1, 4,
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1, 1, 1, 11, 7, 1, 11, 2, 1, 1, 1, 12, 7, 1, 12, 2, 1, 1, 1, 13, 7, 1, 13, 2, …]
i=6,j=8:
0.688195880291328661731069238608619692304451620681500381433806544843004273702375 40
[0, 1, 2, 4, 1, 4, 1, 4, 44, 1, 1, 3, 1, 1, 1, 1, 4, 1, 3, 2, 1, 12, 1,
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4, 4, 2, 2, 1, 3, 4, 1, 1, 6, 2, 3, 1, 5, 13, 5, 1, 3, 1, 3, 5, 1, 1, 1, 2,
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i=7,j=8:
0.794205823929501361799907081109870962295140539596488947181447298607337347777365 54
[0; 1, 3, 1, 6, 9, 1, 1, 1, 32, 1, 11, 1, 1, 1, 1, 17, 1, 1, 2, 4, 15, 1, 3,
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4, 3, 14, 9, 3, 1, 8, 1, 16, 1, 8, 1, 2, 2, 1, 1, 1, 2, 1, 1, 1, 3, 1, 466, 6,
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i=8,j=8:
0.898103047074897857070259252505198819013665122714266550440699730321600457760197 66
[0; 1, 8, 1, 4, 2, 1, 2, 4, 4, 4, 1, 1, 3, 1, 1, 1, 16, 1, 1, 1, 1, 1, 9, 1,
1, 1, 1, 1, 1, 2, 6, 2, 1, 3, 1, 5, 5, 2, 3, 1, 1, 3, 5, 1, 44, 2, 1, 134, 1,
7, 9, 1, 1, 6, 3, 6, 1, 2, 5, 1, 1, 1, 2, 3, 22, 1, 1, 1, 12, 1, 8, 66, 1, 1,
2, 5, 1, 137, 2, 1, 3, 5, 1, 2, 2, 7, 22, 1, 4, 42, 1, 3, 4, 1, 1, 1, 5, 13, 1, …]
i=9,j=8:
1
i=10,j=8:
1.1
[1; 10]
i=1,j=9:
0.108756674701440277619851645407394974460142567339449702257750924157741745277137 95
[0; 9, 5, 7, 1, 1, 4, 1, 1, 1, 1, 1, 1, 4, 1, 1, 1, 1, 1, 4, 2, 12, 1, 1, 1,
1, 1, 10, 1, 5, 3, 1, 5, 22, 3, 1, 1, 1, 1, 1, 3, 39, 1, 1, 1, 1, 2, 1, 1, 1,
1, 65, 3, 3, 6, 102, 1, 4, 7, 3, 1, 2, 2, 1, 6, 3, 1, 7, 12, 1, 1, 2, 1, 23, 2,
12, 2, 1, 2, 1, 6, 2, 6, 2, 8, 2, 2, 1, 2, 4, 1, 6, 1, 559, 2, 1, 1, 1, 5, …]
i=2,j=9:
0.215289145523470895162805050545042949260588176677673073955331350360988533496095 10
[0; 4, 1, 1, 1, 4, 2, 3, 1, 3, 1, 3, 1, 1, 2, 16, 2, 2, 25, 1, 2, 1, 22, 5, 1,
1, 5, 1, 44, 19, 10, 1, 4, 13, 16, 3, 7, 1, 10, 2, 4, 1, 205, 9, 30, 1, 1, 1, 1,
2, 1, 7, 3, 1, 3, 1, 3, 9, 11, 1, 101, 1, 11, 4, 4, 1, 3, 1, 2, 1, 4, 4, 10, 4,

1120, 3, 1, 10, 1, 1, 22, 2, 1, 9, 1, 9, 1, 1, 1, 1, 11, 3, 1, 1, 1, 3, 1, 2, 1, …]
i=3,j=9:
0.319716786537954257242375158494087054393516691164767499371817829309037405521212 19
[0; 3, 7, 1, 4, 1, 3, 2, 1, 26, 2, 2, 1, 8, 4, 1, 1, 1, 1, 1, 1, 79, 1, 1, 1,
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1, 8, 111, 1, 2, 3, 1, 2, 2, 3, 4, 2, 1, 28, 1, 2, 4, 4, 11, 50, 3, 36, 2, 1, 2,
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i=4,j=9:
0.422149284840568839060090873196025279896119170139277677213043757199533872668530 59
[0; 2, 2, 1, 2, 2, 6, 2, 1, 6, 1, 2, 1, 4, 39, 1, 38, 1, 39, 6, 1, 2, 3,
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4, 1, 1, 39, 2, 39, 2, 39, 1, 1, 5, 1, 2, 2, 1, 1, 4, 1, 2, 1, 1, 1, 1, 3, 2,
4, 2, 4, 2, 3, 1, 1, 1, 3, 2, 4, 2, 2, 2, 1, 5, 2, 1, 1, 2, 1, 4, 1, 2, 39, 1, …]
i=5,j=9:
0.522687659722699149935683506185009774608675925216936490374127519924385121747354 08
[0; 1, 1, 10, 1, 1, 12, 1, 1, 14, 1, 1, 16, 1, 1, 18, 1, 1, 20, 1, 1, 22, 1, 1, 24,
1, 1, 26, 1, 1, 28, 1, 1, 30, 1, 1, 32, 1, 1, 34, 1, 1, 36, 1, 1, 38, 1, 1, 40, 1,
1, 42, 1, 1, 44, 1, 1, 46, 1, 1, 48, 1, 1, 50, 1, 1, 52, 1, 1, 54, 1, 1, 56, 1, 1,
58, 1, 1, 60, 1, 1, 62, 1, 1, 64, 1, 1, 66, 1, 1, 68, 1, 1, 70, 1, 1, 72, 1, 1, …]
i=6,j=9:
0.621425152441850074356082989058624637116860478303385997083891093055830434894596 60
[0; 1, 1, 1, 1, 1, 3, 1, 2, 1, 14, 5, 2, 1, 6, 2, 12, 40, 14, 4, 4, 1, 2,
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1, 5, 1, 1, 2, 12, 1, 1, 39, 1, 1, 13, 3, 1, 1, 4, 1, 2, 1, 1, 1, 1, 2, 12, 1,
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i=7,j=9:
0.718448005617334137704504162328687376805650361664113140094701315029493705344043 37
[0; 1, 2, 1, 1, 4, 3, 66, 1, 5, 3, 3, 8, 1, 3, 1, 8, 7, 1, 8, 4, 1, 2, 2,
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1, 1, 1, 2, 4, 2, 8, 2, 4, 2, 1, 5, 3, 1, 3, 8, 1, 232, 1, 1, 2, 1, 2, 2, 1, 9,
5, 1, 12, 1, 1, 1, 1, 2, 1, 1, 8, 1, 5, 1, 1, 1, 11, 2, 1, 58, 80, 61, 2, 1, …]
i=8,j=9:
0.813836148123440915187062443263463682946777176169530275716569136831103088328438 64
[0; 1, 4, 2, 1, 2, 4, 4, 4, 1, 1, 3, 1, 1, 1, 16, 1, 1, 1, 1, 1, 9, 1, 1, 1,
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1, 1, 6, 3, 6, 1, 2, 5, 1, 1, 1, 2, 3, 22, 1, 1, 1, 12, 1, 8, 66, 1, 1, 2, 5,
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i=9,j=9:
0.907663798776572984914179521268423956908732045253130225350225484122671254602703 47
[0; 1, 9, 1, 4, 1, 7, 2, 8, 4, 21, 1, 1, 4, 1, 12, 1, 4, 1, 17, 2, 6, 1, 8,
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i=10,j=9:
1
i=1,j=10:
0.098252345379493959451327487483402099786937382256038355786953243875335165091986284
[0; 10, 5, 1, 1, 1, 1, 1, 4, 1, 1, 46, 1, 1, 2, 15, 2, 1, 17, 1, 2, 3, 5, 1,
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i=2,j=10:
0.194837951281686995902665570762324727705297850205399524305915188012189007077795 97
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i=3,j=10:
0.289832030950948831377483248334218340744220619839209729446109495333010640455363 04
[0; 3, 2, 4, 1, 1, 8, 1, 1, 3, 2, 1, 7, 1, 2, 2, 1, 12, 2, 1, 2, 11, 11, 12,
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61, 4, 2, 15, 1, 1, 8, 1, 1, 18, 5, 1, 204, 1, 5, 8, 2, 2, 1, 1, 6, 1, 1, 1, 1,

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i=4,j=10:
0.383304619333347524103977615484461395937848516929908191258990468496970120763882 05
[0; 2, 1, 1, 1, 1, 3, 1, 8, 1, 8, 7, 26, 1, 1, 1, 5, 1, 239, 1, 8, 1, 1, 2, 9,
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26, 37, 4, 3, 9, 3, 2, 1, 8, 1, 8, 1, 8, 1, 2, 2, 2, 3, 2, 1, 16, 9, 12, 8, 239,
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i=5,j=10:
0.475321038411000585805116556233901558393137913375270678618816560728656409644964 42
[0; 2, 9, 1, 1, 1, 2, 2, 1, 2, 3, 3, 3, 9, 1, 2, 1, 9, 4, 9, 1, 3, 1, 2,
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1, 10, 3, 3, 11, 9, 1, 10, 1, 9, 12, 9, 1, 11, 1, 2, 2, 1, 12, 3, 3, 13, 9, 1, …]
i=6,j=10:
0.565942311805570337608310016129647287435258871801987699228115071351010542462377 14
[0; 1, 1, 3, 3, 2, 3, 3, 2, 1, 2, 2, 1, 2, 1, 2, 2, 1, 3, 9, 1, 3, 3, 3,
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9, 1, 9, 3, 3, 10, 3, 3, 10, 1, 2, 2, 1, 10, 1, 2, 2, 1, 11, 9, 1, 11, 3, 3, …]
i=7,j=10:
0.655225535083970787520355054364510282065461612828762407731049046392132057786455 97
[0; 1, 1, 1, 9, 22, 3, 1, 1, 3, 3, 2, 2, 1, 1, 2, 26, 2, 1, 1, 1, 2, 2, 2,
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9, 13, 1, 7, 1, 2, 26, 2, 1, 8, 1, 1, 11, 3, 1, 2, 3, 77, 1, 1, 9, 9, 1, 2, 2,
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i=8,j=10:
0.743224207276036747488214857220575879611349780666484056805366560689086356960356 17
[0; 1, 2, 1, 8, 2, 9, 8, 3, 8, 3, 4, 1, 4, 3, 4, 5, 3, 5, 1, 1, 2, 2, 1, 1,
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i=9,j=10:
0.829988528337742525272622766669316087382235936371737379656441538047893885133346 48
[0; 1, 4, 1, 7, 2, 8, 4, 21, 1, 1, 4, 1, 12, 1, 4, 1, 17, 2, 6, 1, 8, 5, 1,
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i=10,j=10:
0.915565666638871029585445248671396643315124323190721560181140278934990974369493 47
[0; 1, 10, 1, 5, 2, 1, 1, 3, 1, 2, 1, 1, 21, 4, 1, 2, 2, 1, 10, 1, 4, 1,
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15, 1, 1, 2, 1, 9, 1, 1, 1, 6, 2, 2, 5, 1, 1, 8, 2, 1, 4, 1, 3, 1, 1, 2, 1, 1,
1, 4, 5, 2, 1, 4, 2, 1, 16, 1, 1, 2, 2, 1, 1, 1, 58, 1, 9, 2, 1, 3, 3, 2, 9, 8, …]

(9.1-100)

** Discussion
** Classification of
cf(i,j) → as decimal value → scf
scf is finite
scf is infinite and
systematically structured:
#1 periodic

…,a_i,bodyguard$_1$,bodyguard$_2$,a_{i+1},…,
the sequence <a_i> is monotonously increasing
#2 nested #1
(pseudo)chaotic.
#1 ?
#2 ?
#3 ?
“wiper“
…..

References

[1] Weisstein, Eric W. "Bessel Function of the First Kind." From *MathWorld*--A Wolfram Web Resource. http://mathworld.wolfram.com/BesselFunctionoftheFirstKind.html
[2] Weisstein, Eric W. "Modified Bessel Function of the First Kind." From *MathWorld*--A Wolfram Web Resource. http://mathworld.wolfram.com/ModifiedBesselFunctionoftheFirstKind.html
[3] https://en.wikipedia.org/wiki/Three-body_problem
[4] R. Montgomery. Das Dreikörperproblem.
Spektrum der Wissenschaft 3.20, S.12-19
[5] https://www.spektrum.de/magazin/im-bann-dreier-koerper/1703162
[6] S.N. Majumdar, E. Trizac. When random walkers help solving intriguing integrals.
Physical Review Letters 123, 020201 (2019)
DOI: 10.1103/PhysRevLett.123.020201
[7] M. Bischoff. Irreführende Muster.
Spektrum der Wissenschaft 3.20, S. 22-24

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