Unit Lambda.2

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;5,3,4,1,47,1,10,1,47,2,4,1,4,1,4,1,1,7,1,5,47,1,46,
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)]

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,
1,1,1,159,2,2,5,2,1,1,11,1,1,1,1,1,1,3,6,1,1,4,57,
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,…]

(2.1-9)

nonperiodic, (pseudo)chaotisch

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,…

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

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

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,…] [1]

= 2[0;2,1,6,2,10,3,,14,4,18,5,…]

tanh(1) = [0;1,3,5,7,9,11,13,15,…]

= 2[0;2,1.5,10,3.5,18,5.5,26,7.5,34,…]

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

= 2[0;4,2,12,4,20,6,28,8,36,10,…]

tanh(0.5) = [0;2,6,10,14,18,22,26,…]

= 2[0;4,3,20,7,36,11,52,15,68,19,…]

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

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

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

(4.1-7)

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,…]

(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

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

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

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

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

Examine the functions

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

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

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

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

(8.1-8)

(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:
0.581976706869326424385002005109011558546869301075396136266787059648043817391669 74
= [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:
1.333333333333333333333333333333333333333333333333333333333333333333333333333333333333333333333333333

[1; 3]
i=4,j=1:
1.6153846153846153846153846153846153846153846153846153846153846153846
[1; 1, 1, 1, 1, 2]
i=5,j=1:
1.8630136986301369863013698630136986301369863013698630136986301369863 0137
[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:
0.3922111911773328143765528784798165283739783853152871235913245670832795704616109 3
[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:
0.7182818284590452353602874713526624977572470936999595749669676277240766303535475 9
[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:
1.4761904761904761904761904761904761904761904761904761904761904761905
[1, 2, 10]
i=6,j=2:
1.6838235294117647058823529411764705882352941176470588235294117647058 8235294117 65
[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:
0.2906166927853624221075334145618450257820687386907346650571314950994188030487010 8
[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:
0.549646778303844882226392684797695600486425283353964559200748022684034606171790 68
[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:
0.784422382354665628753105756959633056747956770630574247182649134166559140923221 85
[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:
1.387096774193548387096774193548387096774193548387096774193548387096774193548387 1
[1; 2, 1, 1, 2, 2]
i=7,j=3:
1.563318777292576419213973799126637554585152838427947598253275109170305676855895 2
[1; 1, 1, 3, 2, 4, 3]
i=8,j=3:
1.730239673635900050994390617032126466088730239673635900050994390617032126466088 7
[1; 1, 2, 1, 2, 2, 2, 2, 1, 2, 3]
i=9,j=3:
1.889104344636025365546879094387086630679733766574078926680991562287091871495204 7
[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:
0.229025365397119837675231238103326053922032427876767236363126130449165759838868 85
[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:
0.440958571290875618663088468054177490956180506502683747599063350772569438322603 75
[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:
0.638700487196159783566974984137768071896043237169022981817501507265554346451825 13
[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:
0.824470167455767323339589027196543400729637925030946838801122034026051909257686 03
[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:
1.3255813953488372093023255813953488372093023255813953488372093023255813953488372
[1; 3, 14]
i=8,j=4:
1.4776536312849162011173184357541899441340782122905027932960893854748603351955307
[1; 2, 10, 1, 2, 5]
i=9,j=4:
1.6236368994989684644857058650162098437960506926024167403477748305334512231063955
[1; 1, 1, 1, 1, 1, 10, 1, 5, 6]
i=10,j=4:
1.7641624590800643622038506352993397325639460689119458469733118792653831215668868
[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:
0.69703728138636941962631883413566786119575979197971030073262141840972187534007833
[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:
0.85160064959487971142263331218369076252805764955869730909000200968740579526910018
[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:
1.1428571428571428571428571428571428571428571428571428571428571428571428571428571
[1, 7]
i=8,j=5:
1.2807017543859649122807017543859649122807017543859649122807017543859649122807018
[1; 3, 1, 1, 3, 2]
i=9,j=5:
1.4139886578449905482041587901701323251417769376181474480151228733459357277882798
[1; 2, 2, 2, 2, 5, 1, 2]
i=10,j=5:
1.5431112724632419676892357959702305318569613359956434924668723906335088037756399
[1; 1, 1, 5, 3, 2, 1, 8, 1, 4]
i=1,j=6:
0.15944184208397258530685064817159502170169272321287479996217023631666195524712287
[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:
0.3124198373012270134488278384427550315590626204431829357387682296143596706401310 2
[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, 4, 1, 2, 2, 47, 1, 1, 2, 11, 1, 1, …]
i=3,j=6:
0.4595793856087220695659314769464153468747111902668253531819263115385382872659951 9
[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:
0.6014723169638803901299313182480994105039454479985808027061142583161546294701473 9
[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:
0.7385739713150156529723949971477063856648284212534320857803758698081750121397178 2
[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:
0.8712966017329617745328985426695848264946997399746378759157767730121523441750979 2
[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:
1.2465753424657534246575342465753424657534246575342465753424657534246575342465753 42465753
[1, 4, 18]
i=10,j=6:
1.3649732620320855614973262032085561497326203208556149732620320855614973262032086
[1; 2, 1, 2, 1, 5, 2, 5]
i=1,j=7:
0.1381140537326221409501709982980701420641425390914582055287828423569751307407866 0
[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:
0.2718793694903128039075091193134307130017514045041615023470312344637995268072358 3
[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:
0.4016421533170841933067504814790690104616312450733973011370354163335250380090336 7
[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:
0.24039279837460078544360867913180742008659010997533224447258243209857258280130638
[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:
0.35620361246740711928222110653053864824658619363407405796349592496892463995430694
[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:
0.46933551477001412688296246757322961779691573259261374320950542470408914431715579
[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:
0.57995051996523426056770251363257455812969193987634566182772898663351961595126073
[0; 1, 1, 2, 1, 1, 1, 2, 7, 1, 2, 2, 1, 1, 1, 3, 7, 1, 3, 2, 1, 1, 1, 4,
7, 1, 4, 2, 1, 1, 1, 5, 7, 1, 5, 2, 1, 1, 1, 6, 7, 1, 6, 2, 1, 1, 1, 7, 7, 1,
7, 2, 1, 1, 1, 8, 7, 1, 8, 2, 1, 1, 1, 9, 7, 1, 9, 2, 1, 1, 1, 10, 7, 1, 10, 2,
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:

0.68819588029132866173106923860861969230445162068150038143380654484300427370237540
[0, 1, 2, 4, 1, 4, 1, 4, 44, 1, 1, 3, 1, 1, 1, 1, 4, 1, 3, 2, 1, 12, 1,
2, 4, 2, 2, 2, 1, 4, 9, 2, 3, 1, 3, 3, 1, 1, 1, 1, 1, 2, 7, 7, 1, 1, 1, 2, 1,
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,
1, 6, 38, 1, 3, 4, 1, 1, 4, 2, 1, 5, 7, 2, 9, 1, 3, 1, 3, 1, 3, 4, 9, 1, 1, 8, …]
i=7,j=8:
0.79420582392950136179990708110987096229514053959648894718144729860733734777736554
[0; 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, 1, 1, 30, …]
i=8,j=8:
0.89810304707489785707025925250519881901366512271426655044069973032160045776019766
[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:
0.10875667470144027761985164540739497446014256733944970225775092415774174527713795
[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:
0.21528914552347089516280505054504294926058817667767307395533135036098853349609510
[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:
0.31971678653795425724237515849408705439351669116476749937181782930903740552121219
[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,
2, 1, 1, 7, 3, 13, 3, 3, 2, 1, 4, 46, 4, 1, 1, 1, 28, 5, 6, 1, 719, 1, 7, 1, 7,
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,
79, 1, 1, 1, 19, 3, 79, 1, 2, 2, 1, 2, 5, 24, 4, 7, 3, 3, 1, 1, 1, 1, 28, 5, 28,…]
i=4,j=9:
0.42214928484056883906009087319602527989611917013927767721304375719953387266853059
[0; 2, 2, 1, 2, 2, 6, 2, 1, 6, 1, 2, 1, 4, 39, 1, 38, 1, 39, 6, 1, 2, 3,
4, 1, 2, 1, 2, 3, 2, 4, 1, 4, 2, 3, 2, 3, 2, 4, 1, 2, 2, 1, 5, 1, 1, 1, 2, 1,
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:
0.52268765972269914993568350618500977460867592521693649037412751992438512174735408
[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:
0.62142515244185007435608298905862463711686047830338599708389109305583043489459660
[0; 1, 1, 1, 1, 1, 3, 1, 2, 1, 14, 5, 2, 1, 6, 2, 12, 40, 14, 4, 4, 1, 2,
1, 2, 2, 12, 3, 2, 1, 5, 1, 3, 1, 1, 1, 2, 2, 4, 1, 2, 1, 1, 1, 13, 3, 1, 2, 2,
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,
1, 2, 2, 1, 5, 2, 3, 1, 1, 1, 2, 1, 1, 1, 4, 1, 2, 1, 1, 2, 13, 3, 2, 2, 2, 1, …]
i=7,j=9:
0.71844800561733413770450416232868737680565036166411314009470131502949370534404337
[0; 1, 2, 1, 1, 4, 3, 66, 1, 5, 3, 3, 8, 1, 3, 1, 8, 7, 1, 8, 4, 1, 2, 2,
2, 9, 1, 2, 1, 6, 3, 2, 3, 1, 2, 2, 4, 1, 3, 9, 2, 2, 1, 1, 1, 1, 1, 1, 28, 4,

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:
0.8138361481234409151870624432634636829467771761695302757165691368311030883284386 4
[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,
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, 3, 2, …]
i=9,j=9:
0.9076637987765729849141795212684239569087320452531302253502254841226712546027034 7
[0; 1, 9, 1, 4, 1, 7, 2, 8, 4, 21, 1, 1, 4, 1, 12, 1, 4, 1, 17, 2, 6, 1, 8,
5, 1, 1, 1, 31, 1, 1, 5, 90, 5, 1, 16, 9, 7, 1, 14, 1, 9, 1, 2, 1, 1, 2, 5, 23,
1, 1, 1, 2, 4, 1, 4, 1, 2, 17, 1, 1, 7, 1, 4, 1, 2, 4, 1, 2, 16, 1, 11, 1, 1, 5,
6, 2, 3, 3, 1, 2, 9, 1, 85, 39, 5, 1, 1, 1, 1, 10, 3, 6, 2, 2, 10, 1, 4, 1, 6, …]
i=10,j=9:
1
i=1,j=10:
0.0982523453794939594513274874834020997869373822560383557869532438753351650919862 84
[0; 10, 5, 1, 1, 1, 1, 1, 4, 1, 1, 46, 1, 1, 2, 15, 2, 1, 17, 1, 2, 3, 5, 1,
51, 2, 2, 9, 1, 1, 4, 4, 1, 3, 1, 1, 1, 1, 1, 10, 1, 1, 1, 1, 1, 6, 1, 2, 2, 1,
56, 11, 2, 2, 1, 2, 1, 4, 1, 27, 6, 1, 12, 3, 1, 2, 5, 3, 3, 2, 2, 1, 1, 2, 2,
2, 2, 2, 2, 4, 1, 1, 2, 20, 14, 1, 1, 3, 1, 2, 4, 3, 1, 61, 2, 17, 1, 9, 1, 19, …]
i=2,j=10:
0.1948379512816869959026655707623247277052978502053995243059151880121890070777959 7
[0; 5, 7, 1, 1, 4, 1, 1, 1, 1, 1, 1, 4, 1, 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, 182, 1, …]
i=3,j=10:
0.2898320309509488313774832483342183407442206198392097294461094953330106404553630 4
[0; 3, 2, 4, 1, 1, 8, 1, 1, 3, 2, 1, 7, 1, 2, 2, 1, 12, 2, 1, 2, 11, 11, 12,
1, 21, 1, 1, 9, 21, 1, 1, 1, 1, 6, 32, 1, 1, 1, 3, 2, 5, 4, 2, 2, 102, 1, 1, 4,
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,
1, 1, 1, 4, 1, 1, 1, 1, 1, 559, 1, 1, 1, 2, 5, 3, 1, 10, 1, 2, 20, 1, 4, 3, 3, 5, …]
i=4,j=10:
0.3833046193333475241039776154844613959378485169299081912589904684969701207638820 5
[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,
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, 1, 8, 1, 6, 2, …]
i=5,j=10:
0.4753210384110005858051165562339015583931379133752706786188165607286564096449644 2
[0; 2, 9, 1, 1, 1, 2, 2, 1, 2, 3, 3, 3, 9, 1, 2, 1, 9, 4, 9, 1, 3, 1, 2,
2, 1, 4, 3, 3, 5, 9, 1, 4, 1, 9, 6, 9, 1, 5, 1, 2, 2, 1, 6, 3, 3, 7, 9, 1, 6,
1, 9, 8, 9, 1, 7, 1, 2, 2, 1, 8, 3, 3, 9, 9, 1, 8, 1, 9, 10, 9, 1, 9, 1, 2, 2,
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:
0.5659423118055703376083100161296472874352588718019876992281150713510105424623771 4
[0; 1, 1, 3, 3, 2, 3, 3, 2, 1, 2, 2, 1, 2, 1, 2, 2, 1, 3, 9, 1, 3, 3, 3,
4, 3, 3, 4, 1, 2, 2, 1, 4, 1, 2, 2, 1, 5, 9, 1, 5, 3, 3, 6, 3, 3, 6, 1, 2, 2,
1, 6, 1, 2, 2, 1, 7, 9, 1, 7, 3, 3, 8, 3, 3, 8, 1, 2, 2, 1, 8, 1, 2, 2, 1, 9,
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:
0.6552255350839707875203550543645102820654616128287624077310490463921320577864559 7
[0; 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, 3, 1, 1, 19, 240, 20, …]
i=8,j=10:
0.7432242072760367474882148572205758796113497806664840568053665606890863569603561 7
[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,
2, 4, 1, 1, 3, 1, 1, 1, 2, 2, 22, 5, 1, 66, 1, 15, 4, 1, 3, 3, 6, 3, 2, 1, 11,

3, 1, 6, 11, 3, 26, 1, 3, 1, 1, 32, 1, 3, 1, 11, 1, 68, 5, 1, 1, 11, 2, 2, 1, 3,
45, 1, 1, 1, 1, 20, 1, 7, 2, 3, 11, 6, 1, 7, 1, 9, 1, 1, 1, 2, 1, 2, 12, 7, 2, …]
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,
1, 1, 31, 1, 1, 5, 90, 5, 1, 16, 9, 7, 1, 14, 1, 9, 1, 2, 1, 1, 2, 5, 23, 1, 1,
1, 2, 4, 1, 4, 1, 2, 17, 1, 1, 7, 1, 4, 1, 2, 4, 1, 2, 16, 1, 11, 1, 1, 5, 6, 2,
3, 3, 1, 2, 9, 1, 85, 39, 5, 1, 1, 1, 1, 10, 3, 6, 2, 2, 10, 1, 4, 1, 6, 1, 2, …]
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,
1, 4, 1, 6, 1, 1, 3, 1, 4, 1, 288, 1, 9, 1, 9, 7, 1, 2, 2, 1, 2, 5, 3, 1, 4,
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 ?

?

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