

කොළඹ විශ්වවිද්‍යාලය - ශ්‍රී ලංකාව

ශාස්ත්‍ර පීඨය

ශාස්ත්‍රවේදී ප්‍රථම වසර පරීක්ෂණය (දෙවන සෙමෙස්තරය) - 2017/2018

FND 1206 - අන්තර්මාධ්‍ය ගණිතය

කාලය : පැය දෙකයි

ප්‍රශ්න (05) පහකට පමණක් පිළිතුරු සපයන්න

ප්‍රශ්න ගණන : 07

පිටු ගණන : 04

( සෑම ප්‍රශ්නයකටම සමාන ලකුණු හිමිවේ )

ගණක යන්ත්‍ර භාවිතයට ඉඩදෙනු නොලැබේ

01. (a) පහත සංඛ්‍යා පරිමේය ද අපරිමේය ද යන්න ප්‍රකාශ කරන්න.

$$x = \frac{17}{\sqrt{100}} + \frac{3}{10}$$

(ලකුණු 2)

$$y = \frac{17}{\sqrt{10}} + \frac{3}{\sqrt{10}}$$

(ලකුණු 3)

(b) සුළු කරන්න.

$$a = \left\{ \left( \frac{\sqrt{2} + \sqrt{3} + \sqrt{4}}{\sqrt{5} + \sqrt{6} + \sqrt{7}} \right)^0 \right\}^2$$

(ලකුණු 5)

$$b = \frac{\sqrt[4]{16} \times (2)^{-1}}{(\sqrt[3]{3})^3 \times 2^2}$$

(ලකුණු 5)

(c) හරය පරිමේය කර සුළු කරන්න.

$$\frac{21}{5 - \sqrt{4}}$$

(ලකුණු 5)

(මුළු ලකුණු : 20)

02. (a) පහත වර්ගජ සමීකරණ විසඳන්න.

(i)  $x^2 - 9x + 14 = 0$  (ලකුණු 2)

(ii)  $x^2 - 2x - 2 = 0$  (ලකුණු 3)

(b)  $x:y = 2:3$  නම්, එවිට  $2x + y : 3x - y$  සොයන්න. (ලකුණු 3)

(c)  $x$  සඳහා විසඳන්න.

$2 \log_2 x - 2 \log_2 7 = \log_2 8 - \log_2 2$  (ලකුණු 5)

(d) (i) සමීකරණය විසඳන්න.

$|x + 1| = 2018$  (ලකුණු 3)

(ii) පහත සමගාමී සමීකරණ විසඳන්න.

$4x - y = 8$

$7x + 2y = 29$

(ලකුණු 4)

(මුළු ලකුණු : 20)

03. (a)  $\varepsilon$ (සර්වත්‍ර කුලකය) =  $\{a, b, c, \dots, x, y, z\}$ ,  $X = \{c, a, s, h\}$ ,  $Y = \{h, a, b, i, t\}$  සහ  $Z = \{t, a, x, i\}$  ලෙස ගනිමු.

(i)  $X \cap Y \cap Z$ ,  $Y \cap Z$ ,  $X \cup Y$ ,  $X \cup Z$ , සහ  $(X \cup Y) \cap (X \cup Z)$  කුලක සොයන්න.

(ලකුණු 5)

(ii)  $X, Y$  සහ  $Z$  කුලක සඳහා  $n(X \cap Y \cap Z) + n[(X \cup Y) \cap (X \cup Z)] = n(X) + n(Y \cap Z)$

යන්න සනාථ කරන්න.

(ලකුණු 5)

(b) එකවර දායු කැට දෙකක් උඩ දැමීමේ සසම්භාවී පරීක්ෂණය සලකන්න.

(i) පළමු දායු කැටයෙන් ඉරට්ටේ සංඛ්‍යාවක් ලැබීමේ සම්භාවිතාව කුමක් ද? (ලකුණු 3)

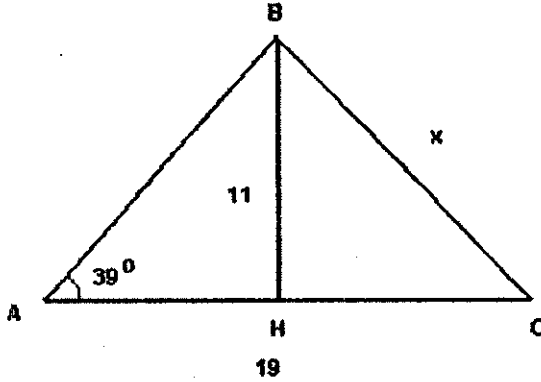
(ii) එකතුව 8 වීමේ සම්භාවිතාව කීයද? (ලකුණු 3)

(iii) පළමු දායු කැටයෙන් ඉරට්ටේ සංඛ්‍යාවක් හෝ එකතුව 8 ලැබීමේ සම්භාවිතාව සොයන්න.

(ඉඟිය:  $P(A \cup B) = P(A) + P(B) - P(A \cap B)$  සූත්‍රය භාවිතා කරන්න) (ලකුණු 4)

(මුළු ලකුණු : 20)

04. (a) දී ඇති රූපයේ BH, AC ට ලම්බ වේ. x (BC හි දිග) සොයන්න.



(ලකුණු 10)

(b) මිටර් 200 ක් උස ගොඩනැගිල්ලක මුදුනේ සිට දෙවන ගොඩනැගිල්ලක පතුලට අවරෝහණ කෝණය අංශක 20 කි. එම ලක්ෂයේ ම සිට දෙවන ගොඩනැගිල්ලේ මුදුනට ආරෝහණ කෝණය අංශක 10 කි. දෙවන ගොඩනැගිල්ලේ උස ගණනය කරන්න.

(ලකුණු 10)

(මුළු ලකුණු : 20)

05. (a)  $(a, b)$  සහ  $(-b, a)$  යා කරන රේඛා ඛණ්ඩයේ දිග සොයන්න.

(ලකුණු 3)

(b) ත්‍රිකෝණයක ශීර්ෂ  $A = (3, 1)$ ,  $B = (7, 11)$  සහ  $C = (-1, 5)$  ලෙස දී ඇත. AB සහ AC හි මධ්‍ය ලක්ෂ්‍ය සොයන්න. B සහ C ලක්ෂ්‍ය යා කරන රේඛාවේ සමීකරණය සොයන්න.

(ලකුණු 7)

(c) අනුක්‍රමණය  $m$  සහ  $y$ -අන්තඃඛණ්ඩය  $c$  වන සරල රේඛාවේ සමීකරණය පහත ආකාරයෙන් ලිවිය හැකිය.

$$y = mx + c$$

(i) අනුක්‍රමණය 5 සහ  $y$ -අන්තඃකේතය 0 වන සරල රේඛාවේ සමීකරණය සොයන්න.

(ලකුණු 4)

(ii)  $y = 4x - 5$  ට සමාන්තරව (2,1) හරහා යන සරල රේඛාවේ සමීකරණය සොයන්න.

(ලකුණු 6)

(මුළු ලකුණු : 20)

06. (a)  $A = \begin{pmatrix} 1 & -3 & 5 \\ 7 & 1 & 1 \\ -2 & 1 & 0 \end{pmatrix}$  සහ  $B = \begin{pmatrix} 4 & 1 & 1 \\ 2 & 9 & 2 \\ 3 & 6 & 4 \end{pmatrix}$  නම්, එවිට  $2A+B$  සහ  $A+2B$

සොයන්න.

(ලකුණු 5)

(b)  $X = \begin{pmatrix} 1 & -1 \\ 7 & 4 \end{pmatrix}$ , සහ  $Y = \begin{pmatrix} 3 & 8 \\ -3 & 1 \end{pmatrix}$  ලෙස ගනිමු.

(i)  $3X + 4Y$  සොයන්න.

(ලකුණු 3)

(ii)  $(3X + 4Y)^T = 3X^T + 4Y^T$  බව පෙන්වන්න.

(ලකුණු 5)

(iii)  $Z = (3X + 4Y)^T + \begin{pmatrix} 1 & -2 \\ 0 & 1 \end{pmatrix}$  නම්, එවිට  $Z$  සොයන්න.

(ලකුණු 7)

(මුළු ලකුණු : 20)

07. (i) පහත සීමා අගයන්න.

(a)  $\lim_{x \rightarrow 3} \frac{x^2 - 9}{x - 3}$

(ලකුණු 2)

(b)  $\lim_{x \rightarrow 1} \frac{2x^2 - x - 1}{x - 1}$

(ලකුණු 3)

(ii)  $f(x) = 4x^4 + 3x^3 + 2x^2 + x$  සහ  $g(x) = (x - 1)(x - 2)$  ලෙස ගනිමු.

(a)  $f$  සහ  $g$  හි ව්‍යුත්පන්න සොයන්න.

(ලකුණු 5)

(b)  $(fg)' = f'g + g'f$  ලෙස දී ඇති විට  $f \cdot g$  හි ව්‍යුත්පන්නය සොයන්න.

(ලකුණු 5)

(c)  $x=1$  වන විට  $(fg)'$  හි අගය කුමක් ද?

(ලකුණු 5)

(මුළු ලකුණු : 20)

\*\*\*\*\*

	மேலான தூல்கள் இடை வித்தியானங்கள் Mean Differences							மேலான தூல்கள் இடை வித்தியானங்கள் Mean Differences									
	0'	10'	20'	30'	40'	50'	60'	1'	2'	3'	4'	5'	6'	7'	8'	9'	
0°	0.0000	0.0029	0.0058	0.0087	0.0116	0.0145	0.0175	89°	3	6	9	12	15	17	20	23	26
1	.0175	.0204	.0233	.0262	.0291	.0320	.0349	88	3	6	9	12	15	17	20	23	26
2	.0349	.0378	.0407	.0436	.0465	.0494	.0523	87	3	6	9	12	15	17	20	23	26
3	.0523	.0552	.0581	.0610	.0640	.0669	.0698	86	3	6	9	12	15	17	20	23	26
4	.0698	.0727	.0756	.0785	.0814	.0843	.0872	85	3	6	9	12	15	17	20	23	26
5	0.0872	0.0901	0.0929	0.0958	0.0987	0.1016	0.1045	84	3	6	9	12	14	17	20	23	26
6	.1045	.1074	.1103	.1132	.1161	.1190	.1219	83	3	6	9	12	14	17	20	23	26
7	.1219	.1248	.1276	.1305	.1334	.1363	.1392	82	3	6	9	12	14	17	20	23	26
8	.1392	.1421	.1449	.1478	.1507	.1536	.1564	81	3	6	9	11	14	17	20	23	26
9	.1564	.1593	.1622	.1650	.1679	.1708	.1736	80°	3	6	9	11	14	17	20	23	26
10°	0.1736	0.1765	0.1794	0.1822	0.1851	0.1880	0.1908	79	3	6	9	11	14	17	20	23	26
11	.1908	.1937	.1965	.1994	.2022	.2051	.2079	78	3	6	9	11	14	17	20	23	26
12	.2079	.2108	.2136	.2164	.2193	.2221	.2250	77	3	6	9	11	14	17	20	23	26
13	.2250	.2278	.2306	.2334	.2363	.2391	.2419	76	3	6	8	11	14	17	20	23	25
14	.2419	.2447	.2476	.2504	.2532	.2560	.2588	75	3	6	8	11	14	17	20	23	25
15	0.2588	0.2616	0.2644	0.2672	0.2700	0.2728	0.2756	74	3	6	8	11	14	17	20	22	25
16	.2756	.2784	.2812	.2840	.2868	.2896	.2924	73	3	6	8	11	14	17	20	22	25
17	.2924	.2952	.2979	.3007	.3035	.3062	.3090	72	3	6	8	11	14	17	19	22	25
18	.3090	.3118	.3145	.3173	.3201	.3228	.3256	71	3	6	8	11	14	17	19	22	25
19	.3256	.3283	.3311	.3338	.3365	.3393	.3420	70°	3	5	8	11	14	16	19	22	25
20°	0.3420	0.3448	0.3475	0.3502	0.3529	0.3557	0.3584	69	3	5	8	11	14	16	19	22	25
21	.3584	.3611	.3638	.3665	.3692	.3719	.3746	68	3	5	8	11	14	16	19	22	24
22	.3746	.3773	.3800	.3827	.3854	.3881	.3907	67	3	5	8	11	13	16	19	21	24
23	.3907	.3934	.3961	.3987	.4014	.4041	.4067	66	3	5	8	11	13	16	19	21	24
24	.4067	.4094	.4120	.4147	.4173	.4200	.4226	65	3	5	8	11	13	16	19	21	24
25	0.4226	0.4253	0.4279	0.4305	0.4331	0.4358	0.4384	64	3	5	8	10	13	16	18	21	24
26	.4384	.4410	.4436	.4462	.4488	.4514	.4540	63	3	5	8	10	13	16	18	21	23
27	.4540	.4566	.4592	.4617	.4643	.4669	.4695	62	3	5	8	10	13	15	18	21	23
28	.4695	.4720	.4746	.4772	.4797	.4823	.4848	61	3	5	8	10	13	15	18	20	23
29	.4848	.4874	.4899	.4924	.4950	.4975	.5000	60°	3	5	8	10	13	15	18	20	23
30°	0.5000	0.5025	0.5050	0.5075	0.5100	0.5125	0.5150	59	3	5	8	10	13	15	18	20	23
31	.5150	.5175	.5200	.5225	.5250	.5275	.5299	58	2	5	7	10	12	15	17	20	22
32	.5299	.5324	.5348	.5373	.5398	.5422	.5446	57	2	5	7	10	12	15	17	20	22
33	.5446	.5471	.5495	.5519	.5544	.5568	.5592	56	2	5	7	10	12	15	17	19	22
34	.5592	.5616	.5640	.5664	.5688	.5712	.5736	55	2	5	7	10	12	14	17	19	22
35	0.5736	0.5760	0.5783	0.5807	0.5831	0.5854	0.5878	54	2	5	7	9	12	14	17	19	21
36	.5878	.5901	.5925	.5948	.5972	.5995	.6018	53	2	5	7	9	12	14	16	19	21
37	.6018	.6041	.6065	.6088	.6111	.6134	.6157	52	2	5	7	9	12	14	16	18	21
38	.6157	.6180	.6202	.6225	.6248	.6271	.6293	51	2	5	7	9	11	14	16	18	20
39	.6293	.6316	.6338	.6361	.6383	.6406	.6428	50°	2	4	7	9	11	13	16	18	20
40°	0.6428	0.6450	0.6472	0.6494	0.6517	0.6539	0.6561	49	2	4	7	9	11	13	15	18	20
41	.6561	.6583	.6604	.6626	.6648	.6670	.6691	48	2	4	7	9	11	13	15	17	20
42	.6691	.6713	.6734	.6756	.6777	.6799	.6820	47	2	4	6	9	11	13	15	17	19
43	.6820	.6841	.6862	.6884	.6905	.6926	.6947	46	2	4	6	8	11	13	15	17	19
44	.6947	.6967	.6988	.7009	.7030	.7050	.7071	45	2	4	6	8	10	12	15	17	19
	60'	50'	40'	30'	20'	10'	0'		1'	2'	3'	4'	5'	6'	7'	8'	9'

இயற்கைச் சைன்கள் NATURAL COSINES

	மேலான தூல்கள் இடை வித்தியானங்கள் Mean Differences							மேலான தூல்கள் இடை வித்தியானங்கள் Mean Differences									
	0'	10'	20'	30'	40'	50'	60'	1'	2'	3'	4'	5'	6'	7'	8'	9'	
45°	0.7071	0.7092	0.7112	0.7133	0.7153	0.7173	0.7193	44°	2	4	6	8	10	12	14	16	18
46	.7193	.7214	.7234	.7254	.7274	.7294	.7314	43	2	4	6	8	10	12	14	16	18
47	.7314	.7333	.7353	.7373	.7392	.7412	.7431	42	2	4	6	8	10	12	14	16	18
48	.7431	.7451	.7470	.7490	.7509	.7528	.7547	41	2	4	6	8	10	12	13	15	17
49	.7547	.7566	.7585	.7604	.7623	.7642	.7660	40°	2	4	6	8	9	11	13	15	17
50°	0.7660	0.7679	0.7698	0.7716	0.7735	0.7753	0.7771	39	2	4	6	7	9	11	13	15	17
51	.7771	.7790	.7808	.7826	.7844	.7862	.7880	38	2	4	5	7	9	11	13	14	16
52	.7880	.7898	.7916	.7934	.7951	.7969	.7986	37	2	4	5	7	9	11	12	14	16
53	.7986	.8004	.8021	.8039	.8056	.8073	.8090	36	2	3	5	7	9	10	12	14	16
54	.8090	.8107	.8124	.8141	.8158	.8175	.8192	35	2	3	5	7	8	10	12	14	15
55	0.8192	0.8208	0.8225	0.8241	0.8258	0.8274	0.8290	34	2	3	5	7	8	10	12	13	15
56	.8290	.8307	.8323	.8339	.8355	.8371	.8387	33	2	3	5	6	8	10	11	13	14
57	.8387	.8403	.8418	.8434	.8450	.8465	.8480	32	2	3	5	6	8	9	11	13	14
58	.8480	.8496	.8511	.8526	.8542	.8557	.8572	31	2	3	5	6	8	9	11	12	14
59	.8572	.8587	.8601	.8616	.8631	.8646	.8660	30°	1	3	4	6	7	9	10	12	13
60°	0.8660	0.8675	0.8689	0.8704	0.8718	0.8732	0.8746	29	1	3	4	6	7	9	10	11	13
61	.8746	.8760	.8774	.8788	.8802	.8816	.8829	28	1	3	4	6	7	8	10	11	12
62	.8829	.8843	.8857	.8870	.8884	.8897	.8910	27	1	3	4	5	7	8	9	11	12
63	.8910	.8923	.8936	.8949	.8962	.8975	.8988	26	1	3	4	5	6	8	9	10	12
64	.8988	.9001	.9013	.9026	.9038	.9051	.9063	25	1	3	4	5	6	8	9	10	11
65	0.9063	0.9075	0.9088	0.9100	0.9112	0.9124	0.9135	24	1	2	4	5	6	7	8	10	11
66	.9135	.9147	.9159	.9171	.9182	.9194	.9205	23	1	2	3	5	6	7	8	9	10
67	.9205	.9216	.9228	.9239	.9250	.9261	.9272	22	1	2	3	4	6	7	8	9	10
68	.9272	.9283	.9293	.9304	.9315	.9325	.9336	21	1	2	3	4	5	6	7	9	10
69	.9336	.9346	.9356	.9367	.9377	.9387	.9397	20°	1	2	3	4	5	6	7	8	9
70°	0.9397	0.9407	0.9417	0.9426	0.9436	0.9446	0.9455	19	1	2	3	4	5	6	7	8	9
71	.9455	.9465	.9474	.9483	.9492	.9502	.9511	18	1	2	3	4	5	6	7	8	9
72	.9511	.9520	.9528	.9537	.9546	.9555	.9563	17	1	2	3	4	4	5	6	7	8
73	.9563	.9572	.9580	.9588	.9596	.9605	.9613	16	1	2	2	3	4	5	6	7	7
74	.9613	.9621	.9628	.9636	.9644	.9652	.9659	15	1	2	2	3	4	5	5	6	7
75	0.9659	0.9667	0.9674	0.9681	0.9689	0.9696	0.9703	14	1	1	2	3	4	4	5	6	7
76	.9703	.9710	.9717	.9724	.9730	.9737	.9744	13	1	1	2	3	3	4	5	5	6
77	.9744	.9750	.9757	.9763	.9769	.9775	.9781	12	1	1	2	3	3	4	4	5	6
78	.9781	.9787	.9793	.9799	.9805	.9811	.9816	11	1	1	2	2	3	3	4	5	5
79	.9816	.9822	.9827	.9833	.9838	.9843	.9848	10°	1	1	2	2	3	3	4	4	5
80°	0.9848	0.9853	0.9858	0.9863	0.9868	0.9872	0.9877	9	0	1	1	2	2	3	3	4	4
81	.9877	.9881	.9886	.9890	.9894	.9899	.9903	8	0	1							

0°	0° 10' 20' 30' 40' 50' 60'							89°	மேல் தலை இடை வித்தியாசங்கள் Mean Differences								
	1'	2'	3'	4'	5'	6'	7'		8'	9'	1'	2'	3'	4'	5'	6'	7'
0°	0.0000	0.0029	0.0058	0.0087	0.0116	0.0145	0.0175	89°	3	6	9	12	15	17	20	23	26
1	.0175	.0204	.0233	.0262	.0291	.0320	.0349	88	3	6	9	12	15	17	20	23	26
2	.0349	.0378	.0407	.0437	.0466	.0495	.0524	87	3	6	9	12	15	18	20	23	26
3	.0524	.0553	.0582	.0612	.0641	.0670	.0699	86	3	6	9	12	15	18	20	23	26
4	.0699	.0729	.0758	.0787	.0816	.0846	.0875	85	3	6	9	12	15	18	21	23	26
5	.0875	.0904	.0934	.0963	.0992	.1022	.1051	84	3	6	9	12	15	18	21	24	26
6	.1051	.1080	.1110	.1139	.1169	.1198	.1228	83	3	6	9	12	15	18	21	24	27
7	.1228	.1257	.1287	.1317	.1346	.1376	.1405	82	3	6	9	12	15	18	21	24	27
8	.1405	.1435	.1465	.1495	.1524	.1554	.1584	81	3	6	9	12	15	18	21	24	27
9	.1584	.1614	.1644	.1673	.1703	.1733	.1763	80°	3	6	9	12	15	18	21	24	27
10°	.1763	.1793	.1823	.1853	.1883	.1914	.1944	79	3	6	9	12	15	18	21	24	27
11	.1944	.1974	.2004	.2035	.2065	.2095	.2126	78	3	6	9	12	15	18	21	24	27
12	.2126	.2156	.2186	.2217	.2247	.2278	.2309	77	3	6	9	12	15	18	21	24	27
13	.2309	.2339	.2370	.2401	.2432	.2462	.2493	76	3	6	9	12	15	18	22	25	28
14	.2493	.2524	.2555	.2586	.2617	.2648	.2679	75	3	6	9	12	16	19	22	25	28
15	.2679	.2711	.2742	.2773	.2805	.2836	.2867	74	3	6	9	13	16	19	22	25	28
16	.2867	.2899	.2931	.2962	.2994	.3026	.3057	73	3	6	9	13	16	19	22	25	28
17	.3057	.3089	.3121	.3153	.3185	.3217	.3249	72	3	6	10	13	16	19	22	26	29
18	.3249	.3281	.3314	.3346	.3378	.3411	.3443	71	3	6	10	13	16	19	23	26	29
19	.3443	.3476	.3508	.3541	.3574	.3607	.3640	70°	3	7	10	13	16	20	23	26	29
20°	.3640	.3673	.3706	.3739	.3772	.3805	.3839	69	3	7	10	13	17	20	23	27	30
21	.3839	.3872	.3906	.3939	.3973	.4006	.4040	68	3	7	10	13	17	20	24	27	30
22	.4040	.4074	.4108	.4142	.4176	.4210	.4245	67	3	7	10	14	17	20	24	27	31
23	.4245	.4279	.4314	.4348	.4383	.4417	.4452	66	3	7	10	14	17	21	24	28	31
24	.4452	.4487	.4522	.4557	.4592	.4628	.4663	65	4	7	11	14	18	21	25	28	32
25	.4663	.4699	.4734	.4770	.4806	.4841	.4877	64	4	7	11	14	18	21	25	29	32
26	.4877	.4913	.4950	.4986	.5022	.5059	.5095	63	4	7	11	15	18	22	25	29	33
27	.5095	.5132	.5169	.5206	.5243	.5280	.5317	62	4	7	11	15	18	22	26	30	33
28	.5317	.5354	.5392	.5430	.5467	.5505	.5543	61	4	8	11	15	19	23	26	30	34
29	.5543	.5581	.5619	.5658	.5696	.5735	.5774	60°	4	8	12	15	19	23	27	31	35
30°	.5774	.5812	.5851	.5890	.5930	.5969	.6009	59	4	8	12	16	20	24	27	31	35
31	.6009	.6048	.6088	.6128	.6168	.6208	.6249	58	4	8	12	16	20	24	28	32	36
32	.6249	.6289	.6330	.6371	.6412	.6453	.6494	57	4	8	12	16	20	25	29	33	37
33	.6494	.6536	.6577	.6619	.6661	.6703	.6745	56	4	8	13	17	21	25	29	33	38
34	.6745	.6787	.6830	.6873	.6916	.6959	.7002	55	4	9	13	17	21	26	30	34	39
35	.7002	.7046	.7089	.7133	.7177	.7221	.7265	54	4	9	13	18	22	26	31	35	40
36	.7265	.7310	.7355	.7400	.7445	.7490	.7536	53	5	9	14	18	23	27	32	36	41
37	.7536	.7581	.7627	.7673	.7720	.7766	.7813	52	5	9	14	19	23	28	32	37	42
38	.7813	.7860	.7907	.7954	.8002	.8050	.8098	51	5	10	14	19	24	29	33	38	43
39	.8098	.8146	.8195	.8243	.8292	.8342	.8391	50°	5	10	15	20	24	29	34	39	44
40°	.8391	.8441	.8491	.8541	.8591	.8642	.8693	49	5	10	15	20	25	30	35	40	45
41	.8693	.8744	.8796	.8847	.8899	.8952	.9004	48	5	10	16	21	26	31	36	41	47
42	.9004	.9057	.9110	.9163	.9217	.9271	.9325	47	5	11	16	21	27	32	37	43	48
43	.9325	.9380	.9435	.9490	.9545	.9601	.9657	46	6	11	17	22	28	33	39	44	50
44	.9657	.9713	.9770	.9827	.9884	.9942	1.0000	45	6	11	17	23	29	34	40	46	51
60°	50°	40°	30°	20°	10°	0°			1'	2'	3'	4'	5'	6'	7'	8'	9'

இயற்கைத் தாள்கள் கோதாள்சன்கள் NATURAL COTANGENTS

45°	45° 10' 20' 30' 40' 50' 60'							44°	மேல் தலை இடை வித்தியாசங்கள் Mean Differences								
	1'	2'	3'	4'	5'	6'	7'		8'	9'	1'	2'	3'	4'	5'	6'	7'
45°	1.0000	1.0058	1.0117	1.0176	1.0235	1.0295	1.0355	44°	6	12	18	24	30	36	41	47	53
46	.0355	.0416	.0477	.0538	.0599	.0661	.0724	43	6	12	18	25	31	37	43	49	55
47	.0724	.0786	.0850	.0913	.0977	.1041	.1106	42	6	13	19	26	32	38	45	51	57
48	.1106	.1171	.1237	.1303	.1369	.1436	.1504	41	7	13	20	27	33	40	46	53	60
49	.1504	.1571	.1640	.1708	.1778	.1847	.1918	40°	7	14	21	28	34	41	48	55	62
50°	1.1918	1.1988	1.2059	1.2131	1.2203	1.2276	1.2349	39	7	14	22	29	36	43	50	58	65
51	.2349	.2423	.2497	.2572	.2647	.2723	.2799	38	8	15	23	30	38	45	53	60	68
52	.2799	.2876	.2954	.3032	.3111	.3190	.3270	37	8	16	24	31	39	47	55	63	71
53	.3270	.3351	.3432	.3514	.3597	.3680	.3764	36	8	16	25	33	41	49	58	66	74
54	.3764	.3848	.3934	.4019	.4106	.4193	.4281	35	9	17	26	35	43	52	60	69	78
55	1.4281	1.4370	1.4460	1.4550	1.4641	1.4733	1.4826	34	9	18	27	36	45	54	63	73	82
56	.4826	.4919	.5013	.5108	.5204	.5301	.5399	33	10	19	29	38	48	57	67	76	86
57	.5399	.5497	.5597	.5697	.5798	.5900	.6003	32	10	20	30	40	50	60	71	81	91
58	.6003	.6107	.6212	.6319	.6426	.6534	.6643	31	11	21	32	43	53	64	75	85	96
59	.6643	.6753	.6864	.6977	.7090	.7205	.7321	30°	11	23	34	45	56	68	79	90	102
60°	1.732	1.744	1.756	1.767	1.780	1.792	1.804	29	1	2	4	5	6	7	8	10	11
61	1.804	1.816	1.829	1.842	1.855	1.868	1.881	28	1	3	4	5	6	8	9	10	12
62	1.881	1.894	1.907	1.921	1.935	1.949	1.963	27	1	3	4	5	7	8	10	11	12
63	1.963	1.977	1.991	2.006	2.020	2.035	2.050	26	1	3	4	6	7	9	10	12	13
64	2.050	2.066	2.081	2.097	2.112	2.128	2.145	25	2	3	5	6	8	9	11	13	14
65	2.145	2.161	2.177	2.194	2.211	2.229	2.246	24	2	3	5	7	8	10	12	14	15
66	2.246	2.264	2.282	2.300	2.318	2.337	2.356	23	2	4	5	7	9	11	13	15	16
67	2.356	2.375	2.394	2.414	2.434	2.455	2.475	22	2	4	6	8	10	12	14	16	18
68	2.475	2.496	2.517	2.539	2.560	2.583	2.605	21	2	4	6	9	11	13	15	17	20
69	2.605	2.628	2.651	2.675	2.699	2.723	2.747	20°	2	5	7	9	12	14	17	19	21
70°	2.747	2.773	2.798	2.824	2.850	2.877	2.904	19	3	5	8	10	13	16	18	21	23
71	2.904	2.932	2.960	2.989	3.018	3.047	3.078	18	3	6	9	12	14	17	20	23	26
72	3.078	3.108	3.140	3.172	3.204	3.237	3.271	17	3	6	10	13	16	19	23	26	29
73	3.271	3.305	3.340	3.376	3.412	3.450	3.487	16	4	7	11	14	18	22	25	29	32
74	3.487	3.526	3.566	3.606	3.647	3.689	3.732	15	4	8	12	16	20	24	29	33	37
75	3.732	3.776	3.821	3.867	3.914	3.962	4.011	14	5	9	14	19	23	28	33	37	42
76	4.011	4.061	4.113	4.165	4.219	4.275	4.331	13	5	11	16	21	27	32	37	43	48
77	4.331	4.390	4.449	4.511	4.574	4.638	4.705	12	6	12	19	25	31	37	44	50	56
78	4.705	4.773	4.843	4.915	4.989	5.066	5.145	11	7	15	22	29	37	44	51	59	66
79	5.145																