Table 1

BBS-ISL Matrix: Factor Pairs Sets & Rows and Columns

n nPPT • PPT	r	Row #	1 #	1 FS 1	1 FS 2	1 R	1 C	2 #	2 FS 1	2 FS 2	2 R	2 C	3 #	3 FS 1	3 FS 2	3 R	3 C	4 #	4 FS 1	4 FS 2	4 R	4 C	5 #	5 FS 1	5 FS 2	5 R	5 C
		0																									
		1	**1**																								
		2	3	1	3	2	1	**4**																			
		3	8	2	4	3	1	5	1	5	3	2	**9**														
		4	15	3	5	4	1	12	2	6	4	2	7	1	7	4	3	**16**									
* 3—4—5	2	5	24	4	6	5	1	21	3	7	5	2	16	2	8	5	3	9	1	9	5	4	**25**				
		6	35	5	7	6	1	32	4	8	6	2	27	3	9	6	3	20	2	10	6	4	11	1	11	6	5
		7	48	6	8	7	1	45	5	9	7	2	40	4	10	7	3	33	3	11	7	4	24	2	12	7	5
		8	63	7	9	8	1	60	6	10	8	2	55	5	11	8	3	48	4	12	8	4	39	3	13	8	5
		9	80	8	10	9	1	77	7	11	9	2	72	6	12	9	3	65	5	13	9	4	56	4	14	9	5
n 6-8-10	4	10	99	9	11	10	1	96	8	12	10	2	91	7	13	10	3	84	6	14	10	4	75	5	15	10	5
		11	120	10	12	11	1	117	9	13	11	2	112	8	14	11	3	105	7	15	11	4	96	6	16	11	5
		12	143	11	13	12	1	140	10	14	12	2	135	9	15	12	3	128	8	16	12	4	119	7	17	12	5
* 5-12-13	4	13	168	12	14	13	1	165	11	15	13	2	160	10	16	13	3	153	9	17	13	4	144	8	18	13	5
		14	195	13	15	14	1	192	12	16	14	2	187	11	17	14	3	180	10	18	14	4	171	9	19	14	5
n 9-12-15	6	15	224	14	16	15	1	221	13	17	15	2	216	12	18	15	3	209	11	19	15	4	200	10	20	15	5
		16	255	15	17	16	1	252	14	18	16	2	247	13	19	16	3	240	12	20	16	4	231	11	21	16	5
* 8-15-17	6	17	288	16	18	17	1	285	15	19	17	2	280	14	20	17	3	273	13	21	17	4	264	12	22	17	5
		18	323	17	19	18	1	320	16	20	18	2	315	15	21	18	3	308	14	22	18	4	299	13	23	18	5
		19	360	18	20	19	1	357	17	21	19	2	352	16	22	19	3	345	15	23	19	4	336	14	24	19	5
n 12-16-20	8	20	399	19	21	20	1	396	18	22	20	2	391	17	23	20	3	384	16	24	20	4	375	15	25	20	5
		21	440	20	22	21	1	437	19	23	21	2	432	18	24	21	3	425	17	25	21	4	416	16	26	21	5
		22	483	21	23	22	1	480	20	24	22	2	475	19	25	22	3	468	18	26	22	4	459	17	27	22	5
		23	528	22	24	23	1	525	21	25	23	2	520	20	26	23	3	513	19	27	23	4	504	18	28	23	5
		24	575	23	25	24	1	572	22	26	24	2	567	21	27	24	3	560	20	28	24	4	551	19	29	24	5
* 7-24-25	6	25	624	24	26	25	1	621	23	27	25	2	616	22	28	25	3	609	21	29	25	4	600	20	30	25	5
n 15-20-25	10	25	624	24	26	25	1	621	23	27	25	2	616	22	28	25	3	609	21	29	25	4	600	20	30	25	5

n nPPT • PPT	r	Row #	6 #	6 FS 1	6 FS 2	6 R	6 C	7 #	7 FS 1	7 FS 2	7 R	7 C	8 #	8 FS 1	8 FS 2	8 R	8 C	9 #	9 FS 1	9 FS 2	9 R	9 C	10 #	10 FS 1	10 FS 2	10 R	10 C
		6	**36**																								
		7	13	1	13	7	6	**49**																			
		8	28	2	14	8	6	15	1	15	8	7	**64**														
		9	45	3	15	9	6	32	2	16	9	7	17	1	17	9	8	**81**									
n 6-8-10	4	10	64	4	16	10	6	51	3	17	10	7	36	2	18	10	8	19	1	19	10	9	**100**				
		11	85	5	17	11	6	72	4	18	11	7	57	3	19	11	8	40	2	20	11	9	21	1	21	11	10
		12	108	6	18	12	6	95	5	19	12	7	80	4	20	12	8	63	3	21	12	9	44	2	22	12	10
* 5-12-13	4	13	133	7	19	13	6	120	6	20	13	7	105	5	21	13	8	88	4	22	13	9	69	3	23	13	10
		14	160	8	20	14	6	147	7	21	14	7	132	6	22	14	8	115	5	23	14	9	96	4	24	14	10
n 9-12-15	6	15	189	9	21	15	6	176	8	22	15	7	161	7	23	15	8	144	6	24	15	9	125	5	25	15	10
		16	220	10	22	16	6	207	9	23	16	7	192	8	24	16	8	175	7	25	16	9	156	6	26	16	10
* 8-15-17	6	17	253	11	23	17	6	240	10	24	17	7	225	9	25	17	8	208	8	26	17	9	189	7	27	17	10
		18	288	12	24	18	6	275	11	25	18	7	260	10	26	18	8	243	9	27	18	9	224	8	28	18	10
		19	325	13	25	19	6	312	12	26	19	7	297	11	27	19	8	280	10	28	19	9	261	9	29	19	10
n 12-16-20	8	20	364	14	26	20	6	351	13	27	20	7	336	12	28	20	8	319	11	29	20	9	300	10	30	20	10
		21	405	15	27	21	6	392	14	28	21	7	377	13	29	21	8	360	12	30	21	9	341	11	31	21	10
		22	448	16	28	22	6	435	15	29	22	7	420	14	30	22	8	403	13	31	22	9	384	12	32	22	10
		23	493	17	29	23	6	480	16	30	23	7	465	15	31	23	8	448	14	32	23	9	429	13	33	23	10
		24	540	18	30	24	6	527	17	31	24	7	512	16	32	24	8	495	15	33	24	9	476	14	34	24	10
* 7-24-25	6	25	589	19	31	25	6	576	18	32	25	7	561	17	33	25	8	544	16	34	25	9	525	15	35	25	10
n 15-20-25	10	25	589	19	31	25	6	576	18	32	25	7	561	17	33	25	8	544	16	34	25	9	525	15	35	25	10

n nPPT • PPT	r	Row #	11 #	11 FS 1	11 FS 2	11 R	11 C	12 #	12 FS 1	12 FS 2	12 R	12 C	13 #	13 FS 1	13 FS 2	13 R	13 C	14 #	14 FS 1	14 FS 2	14 R	14 C	15 #	15 FS 1	15 FS 2	15 R	15 C
		11	**121**																								
		12	23	1	23	12	11	**144**																			
* 5-12-13	4	13	48	2	24	13	11	25	1	25	13	12	**169**														
		14	75	3	25	14	11	52	2	26	14	12	27	1	27	14	13	**196**									
n 9-12-15	6	15	104	4	26	15	11	81	3	27	15	12	56	2	28	15	13	29	1	29	15	14	**225**				
		16	135	5	27	16	11	112	4	28	16	12	87	3	29	16	13	60	2	30	16	14	31	1	31	16	15
* 8-15-17	6	17	168	6	28	17	11	145	5	29	17	12	120	4	30	17	13	93	3	31	17	14	64	2	32	17	15
		18	203	7	29	18	11	180	6	30	18	12	155	5	31	18	13	128	4	32	18	14	99	3	33	18	15
		19	240	8	30	19	11	217	7	31	19	12	192	6	32	19	13	165	5	33	19	14	136	4	34	19	15
n 12-16-20	8	20	279	9	31	20	11	256	8	32	20	12	231	7	33	20	13	204	6	34	20	14	175	5	35	20	15
		21	320	10	32	21	11	297	9	33	21	12	272	8	34	21	13	245	7	35	21	14	216	6	36	21	15
		22	363	11	33	22	11	340	10	34	22	12	315	9	35	22	13	288	8	36	22	14	259	7	37	22	15
		23	408	12	34	23	11	385	11	35	23	12	360	10	36	23	13	333	9	37	23	14	304	8	38	23	15
		24	455	13	35	24	11	432	12	36	24	12	407	11	37	24	13	380	10	38	24	14	351	9	39	24	15
* 7-24-25	6	25	504	14	36	25	11	481	13	37	25	12	456	12	38	25	13	429	11	39	25	14	400	10	40	25	15
n 15-20-25	10	25	504	14	36	25	11	481	13	37	25	12	456	12	38	25	13	429	11	39	25	14	400	10	40	25	15

n nPPT • PPT	r	Row #	16 #	16 FS 1	16 FS 2	16 R	16 C	17 #	17 FS 1	17 FS 2	17 R	17 C	18 #	18 FS 1	18 FS 2	18 R	18 C	19 #	19 FS 1	19 FS 2	19 R	19 C	20 #	20 FS 1	20 FS 2	20 R	20 C
		16	**256**																								
* 8-15-17	6	17	33	1	33	17	16	**289**																			
		18	68	2	34	18	16	35	1	35	18	17	**324**														
		19	105	3	35	19	16	72	2	36	19	17	37	1	37	19	18	**361**									
n 12-16-20	8	20	144	4	36	20	16	111	3	37	20	17	76	2	38	20	18	39	1	39	20	19	**400**				
		21	185	5	37	21	16	152	4	38	21	17	117	3	39	21	18	80	2	40	21	19	41	1	41	21	20
		22	228	6	38	22	16	195	5	39	22	17	160	4	40	22	18	123	3	41	22	19	84	2	42	22	20
		23	273	7	39	23	16	240	6	40	23	17	205	5	41	23	18	168	4	42	23	19	129	3	43	23	20
		24	320	8	40	24	16	287	7	41	24	17	252	6	42	24	18	215	5	43	24	19	176	4	44	24	20
* 7-24-25	6	25	369	9	41	25	16	336	8	42	25	17	301	7	43	25	18	264	6	44	25	19	225	5	45	25	20
n 15-20-25	10	25	369	9	41	25	16	336	8	42	25	17	301	7	43	25	18	264	6	44	25	19	225	5	45	25	20

n nPPT • PPT	r	Row #	21 #	21 FS 1	21 FS 2	21 R	21 C	22 #	22 FS 1	22 FS 2	22 R	22 C	23 #	23 FS 1	23 FS 2	23 R	23 C	24 #	24 FS 1	24 FS 2	24 R	24 C	25 #	25 FS 1	25 FS 2	25 R	25 C
		21	**441**																								
		22	43	1	43	22	21	**484**																			
		23	88	2	44	23	21	45	1	45	23	22	**529**														
		24	135	3	45	24	21	92	2	46	24	22	47	1	47	24	23	**576**									
* 7-24-25	6	25	184	4	46	25	21	141	3	47	25	22	96	2	48	25	23	49	1	49	25	24	**625**				
n 15-20-25	10	25	184	4	46	25	21	141	3	47	25	22	96	2	48	25	23	49	1	49	25	24	**625**				

Table : This Table brings together the lower half of the the standard, symmetrical **BBS-ISL Matrix** along with one of it's sub-**Matrix** expressions: that of the **Factor Pair Sets** and the **Rows** & **Columns**.

Summary ->

Key: **PPT**= • **Primitive Pythagorean Triple. nPPT=nonPrimitive Pythagorean Triple.** r=EVEN # where $r^2/2=st$. **FS=FPS=Factor Pair Set** for Inner Grid (IG) Number (#). Every # has one or more **FPS**s. **FS 1** = 1st # in **FPS**. **FS 2**= 2nd # in **FPS**. **R=Row. C=Column. Row** (vertical Axis) and **Column** (horizontal Axis) that the IG# intersects on. The BLUE horizontal color bands=**Pythagorean Triples (PTs).** The Prime Diagonal (PD), formed from the Axis (**Row**) x Axis (**Column**) is in larger **BOLD** font at the Top of the table for each **Column** header. The Numbers (#s) within the IG of the **Matrix** are in **BOLD** font along the left side of each PD #. Every IG# = **FS1** x **FS2** (by **Factor Pair** definition). Every **Row** & **Column** #, and, every **FS1** & **FS2** #, is inter-related: **(FS1 + FS2)/2** = **Row** # and **(FS2 - FS1)/2** = **Column** #. Any SQUARED IG# is also found on the PD, and, is one squared side of a **PT** (shown as colored cells). A **PT Row** contains another type of **Pair Set**, the b^2 and a^2 shorter sides of the triangle, with the c^2 value at the intersection of that **Row** with the PD. The **FS1** of each of those two **Pair Sets** — the b^2 and a^2 squared #s — is equal to the "s" & "t" values of the *Dickson Method* (**DM**) for algebraically calculating **ALL PT**s as: r=EVEN # where $r^2/2=st$ is satisfied, such that side "a"$= r + s$, side "b"$= r + t$, and side "c" $= r + s + t$.

For example: 3—4—5 **PT**, with an r=2 value, has b^2= 16 with **FS1** = 2 = s, a^2= 9 with **FS1** = 1 = t. The 1 and 2 values are BOTH the **FPS** values of **FS1** (one for each), and, are the s & t values of the **DM** calculation ($r^2/2=st=2^2/2=(1)(2)$). ALL **PT**s follow this same pattern. One can take the sum (∑) of the (**FS2a** + **Col-a**) + (**FS2b** + **Col-b**) all x $r/2$ = 4A = 4 x Area of that **PT**, and that 4A # will be on THAT **PT ROW**.

For example: 3—4—5, [**FS2a** + **Col-a**) + (**FS2b** + **Col-b**)] x $r/2$ = [8 + 3) + (9 + 4)] x 2/2 = 24 = 4A = 1st # on the **Row 5**. This, too, works for all **PT**s (though the location of 4A is dependent on f, where $f = b - a = t - s$ = **FS1a** - **FS1b**, where $f^2 + 4A = c^2$ *in the proof of any* **PT**.).

Exponentials also follow some very simple patterned sequenced steps but that requires a far larger **Matrix** Table to more fully demonstrate. In a nutshell: exponential X^2 is, of course, that which forms the PD. All other X^n, where ^{n} = 3, 4, 5, ..., are found on the **Parallel Diagonals** (1st, 2nd, 3rd,... diagonals parallel to the PD) starting from the left **ROW** Axis. For example: 2^3 = 8, 2^4 = 16, 2^5 = 32, ... starts at **Row** #2, and following the 2nd **Parallel Diagonal**, 8—16—32—..., exponentials are found. Dropping down to **Row** #3, and the 3^3 = 27, 3^4 = 81, 3^5 = 243,.. exponentials are found. Drop down to the **Row** #4 to find the 4^3, 4^4, 4^5,... exponentials, and so on. This is the pattern "within" exponentials, i.e. X= constant # and the exponential ^{n} varies. A different, but fascinating pattern occurs "across" exponentials, as well. Here X varies while the exponential ^{n} remains constant. As noted above, the "within" exponential pattern falls on Parallel Diagonals with equal number of cell steps down from the PD. The slope of the line connecting the "across" exponentials is different (steeper). Additionally, each exponential value predicts the location of the next. See the **Exponentials Table**.