Table 1b: r-sets (r=2 to r=100) — Distribution

·	PPT	r	# of Primitives within r-set: 1	2	4	s	t	s	t	s	t	s	t	s	t	s	t	s	t	s	t	s	t	s	t	s	t	s	t	s	t	s	t
*	3—4—5	2	1				1		2																								
*	6-8-10 5-12-13	4	1				1		2		4		6																				
*	8-15-17 7-24-25	6		2			1		2						5				10														
*	12-16-20 9-40-41	8	1				1				4		9										32										
*	12-35-37 11-60-61	10		2			1		2									25											50				
*	20-21-29 16-30-34 13-84-85	12		2			1				4		8		5		16																72
*	16-63-65 15-112-113	14		2			1		2																	49							98
*	24-32-40 20-48-52 17-144-145	16	1				1				4		8				16						32										128
*	27-36-45 20-99-101 19-180-181	18		2			1		2						9				18														162
*	28-45-53 24-70-74 21-220-221	20		2			1				4		8					25											50				200
*	24-143-145 23-264-265	22		2			1		2																								242
*	40-42-58 33-56-65 32-60-68 25-312-313	24		2			1						8		9		16		18				32			56							288
*	28-195-197 27-364-365	26		2			1		2																								338
*	36-77-85 29-420-421	28		2			1						8													49							392
*	48-55-73 39-80-89 32-255-257 31-480-481	30			4		1		2						9				18		25								50				450
*	48-64-80 40-90-104 33-544-545	32	1				1						8				16						32										512
*	36-323-325 35-612-613	34		2			1		2																								578
*	54-72-90 45-108-117 44-117-125 37-684-685	36		2			1						8		9				18							56							648
*	40-399-401 39-760-761	38		2			1		2																								722
*	65-72-97 56-90-106 48-140-148 41-840-841	40		2			1						8				16				25		32						50				800
*	60-91-109 51-140-149 44-483-485 43-924-925	42			4		1		2						9				18							49							882
*	52-165-173 45-1012-1013	44		2			1						8																				968
*	48-575-577 47-1104-1105	46		2			1		2																								1058
*	80-84-116 65-112-135 57-176-185 56-192-200 49-1200-1201	48		2			1						8		9				18				32			56							1152
*	75-160-125 52-675-677 51-1300-1301	50		2			1		2												25								50				1250
*	60-221-229 53-1404-1405	52		2			1						8																				1352
*	72-135-153 63-216-225 56-783-785 55-1512-1513	54		2			1		2						9				18														1458
*	88-105-137 64-252-260 57-1624-1625	56		2			1						8										32			49							1568
*	60-899-901 59-1740-1741	58		2			1		2																								1682
*	96-110-146 85-132-157 78-165-178 69-260-298 61-1680-1681	60			4		1						8		9				18		25				60				50				1800
*	64-1023-1025	62		2			1		2																								1922
*	96-126-165 72-320-328 65-2112-2113	64	1				1						8						18				32										2048
*	84-187-205 75-308-317 68-1155-1157 67-2244-2245	66			4		1		2						9				18														2178
*	76-357-365 69-2380-2381	68		2			1						8																				2312
*	119-120-169 95-168-193 72-1295-1297 71-2520-2521	70			4		1		2												25					49			50				2450
*	104-153-185 90-210-234 81-360-369 80-396-404	72		2			1						8		9				18				32										2592
*	73-2664-2665	74		2			1		2																								2738
*	76-1443-1445 75-2812-2813	76		2			1						8																				2888
*	96-247-265 87-416-425 80-1599-1601 79-3120-3121	78			4		1		2						9				18														3042
*	130-144-194 113-180-210	80		2			1						8								25		32							50			3200
*	105-208-233 88-480-488	82		2			1		2																								3362
*	84-1763-1765 83-3464-3465	84		2			1						8													49							3528
*	133-156-205 102-260-298 93-476-485 92-525-533 85-2612-2613	86			4		1		2						9				18														3698
*	88-1935-1937 87-3784-3785	88		2			1						8										32										3872
*	120-209-241 96-572-580	90		2			1		2																								4050
*	140-171-221 115-252-277 108-310-337 99-540-549 92-2115-2117 91-4140-4141	92			4		1		2						9				18		25								50				4232
*	100-621-629 93-4324-4325	94		2			1						8																				4418
*	96-2303-2305 95-6513-6513	96		2			1		2														32										4608
*	120-240-272 114-352-370 105-608-617 104-672-680	98		2			1						8		9				18							49							4802
*	97-4704-4705	100		2			1		2												25								50				5000
*	147-196-245 100-999-2001 99-4900-4901																																
*	150-299-299 120-300-325 108-725-733 101-5100-5101																																

Black Dot & Dark Grey=PPT across Table

1—2—8—9—16—25—32—49—50 PATTERNS starting with 1st PPT

PPT s-sets are in larger BOLD colored rectangles

Every r-set contains **s=1 PPT**

Every 2nd r-set contains **s=2 PPT** (**r=odd = sets** contain both **s=2, not** shown here)

Every 2nd r-set contains s=8 PT Pattern 1:1:1:1 1:1:1:1 Every 2nd r-set contains **s=8 PPT**

Every 3rd r-set contains s=9 PT Pattern 2:1:2:1 to s=9 nPPT

Every 3rd r-set contains s=18 PT Pattern 1:1:1:1 1:1:1:1 to s=18 nPPT

Every 5th r-set contains s=25 PT Pattern approach 2:1:2:1 to s=25 nPPT

Every 4th r-set contains s=32 PT Pattern approach 2:1:2:1 to s=32 nPPT

Every 7th r-set contains s=49 PT Pattern approach 2:1:2:1 **s=49 PPT** to s=49 nPPT

Every 5th r-set contains s=50 PT Pattern approach 2:1:2:1 **s=50 PPT** to s=50 nPPT

Summary —>>

Table 1b: **r-sets** is the first of two major classifications that reveal and make sense of the Primitive Pythagorean Triples (PPTs) and their distributions within the **BBS-ISL Matrix**. The *Dickson Method*, which generates **Factor-Pair sets** (the "s" and "t" pair-sets above, as derived from **r/2, where r=EVEN #**). The other major classification parameter is to parse out the PPTs by their distribution as "**s-sets**", i.e. as they form **s=1**, **s=2**, **s=3**, **s=4**,… groups. This is extensively covered in **Tables 2-10** and **11-14**.

Within the **r-set** distribution, a large number of PPT patterns emerge. Foremost, is that the Primordial Diagonal (PD) derived numbers sequences: **1-4-9-16-25-36-49-64-81**… and their double (2x) **2-8-18-32-50-72-98**… exclusively make up ALL the PPTs. The **BOLD** numbers form the PPTs!

All **r-sets** contain at least 2 PPTs except as noted. All r-sets naturally contain the **s=1** PPT. Thus all **r-sets** contain at least 1 PPT. Those r-sets that contain only a single PPT are found in **r-sets: 2-4-8-16-32-64**… See the pattern!

All **r-sets** contain a **s=2** triple, mostly these are PPTs, but not always. The leading candidates are **s=2, s=8, s=9, s=18, s=25, s=32, s=49,** and **s=50** (within the **r=2** to **r=100** sets).

Between the few **r-sets** with only 1 PPT and the majority r-sets with 2 PPTs, are a third group with 4 PPTs: the **s=1** is a given, and 3 out of the patterned combinations of the **s=2, s=8, s=9, s=18, s=25, s=32, s=49,** and **s=50** sets combine to give the total of 4 PPTs.

This **Table 1b** presents much of the same basic information as shown in **Table 1a**.

However, **Table 1b** is all about the distribution of the number of PPTs found within any given **r-set**. This pattern is just one of several, that, when combined, reveal just how inter-connected all the PTs – PPTs and nPPTS, alike — are, and ultimately, how they ALL derive from the original primordial and primitive **3—4—5** PPT.

What is NEW in Table 1b? As described in the ending boxes above, every **s-set** has its own pattern and that pattern is consistently realized throughout the **r-set** distribution. **S=1** sets are present in every **r-set** (an PPTs, **s=2** in nearly all **r-sets**, but only about half are PPTs (as shown). The pattern expands as the **s-set** value expands, often as multiples of the base **s-set**. **S=8** occurs in every 2nd **r-set**, but is only PPT in every 4th **r-set**. It follows an every-other-one rhythm within this pattern. **S=9** is present in every 3rd **r-set**, but has a PPT pattern of **2:1:2:1**…the **BOLD** being the PPTs. The pattern for **s=18** is 1:1:1:3:1:1:1:3 as **PPT** : nPPT : **PPT** : nPPT : nPPT : nPPT : nPPT : **PPT** : nPPT : **PPT** : nPPT : nPPT:… And it approaches something similar for **s=25, s=32, s=49, s=50**… More data points are needed to fully flush out these larger, more expansive s-set patterns.

Note: Because Factor-Pairs do not have an order preference, and because they make up the "s" and "t" values for any PT, a given number, e.i. **8**, may appear as an **s-set** value in one PT instance or as a **t-set** value in another. The distribution of that number across the **r-sets** will follow two patterns: in the **first pattern**, it will show up as either an **s-set** or **t-set** value, e.i number **8** pops in every 2nd **r-set**. The **second pattern,** however, is strictly when that number occurs as an **s-set** value and being a PPT (not nPPT) — as **s=8** occurs as a PPT in every 4th **r-set**. Typically, the PPT pattern is a multiple of the underlying **first pattern**. This is an important distinction, without which, one may entirely miss the PPT pattern that NOW seems so obvious and inevitable.

Copyright©2015, Reginald Brooks, Brooks Design.