Table 2h

Tertiary Tree of Primitive Pythagorean Triples

Trunk									1st Tertiary Branch									2nd Tertiary Branches									3rd Tertiary Branches							
PPT	*r*	*s*	*t*	A	4A	8A	*f*	*U* ÷ *c* — *p*	PPT	*r*	*s*	*t*	A	4A	8A	*f*	*U* ÷ *c* — *p*	PPT	*r*	*s*	*t*	A	4A	8A	*f*	*U* ÷ *c* — *p*	PPT	*r*	*s*	*t*	A	4A	8A	*f*	*U* ÷ *c* — *p*
																											9-40-41	8	1	32	180	720	1440	31	25
																		7-24-25	6	1	18	84	336	672	17	13	**88-105-137**	56	32	49	4620	18480	36960	17	25
																											60-91-109	42	18	49	2730	10920	21840	31	25
																											84-187-205	66	18	121	7,854	31,416	62,832	103	73
																		48-55-73	30	18	25	1320	5280	10560	7	13	**297-304-425**	176	121	128	45144	180576	361152	7	73
																											105-208-233	80	25	128	10920	43680	87360	103	73
																											95-168-193	70	25	98	7980	31920	63840	73	53
																		28-45-53	20	8	25	630	2520	5040	17	13	**207-224-305**	126	81	98	23184	92736	185472	17	53
																											44-117-125	36	8	81	2574	10296	20592	73	53
																											52-165-173	44	8	121	4,290	17,160	34,320	113	85
																		36-77-85	28	8	49	1386	5544	11088	41	29	**319-360-481**	198	121	162	57,420	229,680	459,360	41	85
																											175-288-337	126	49	162	25,200	100,800	201,600	113	85
																											217-456-505	168	49	288	49,476	197,904	395,808	239	169
3-4-5	2	1	2	6	24	48	1	1	**20-21-29**	12	8	9	210	840	1680	1	5	**119-120-169**	70	49	50	7140	28560	57120	1	29	**696-697-985**	408	288	289	242556	970224	1940448	1	169
																											220-459-509	170	50	289	50,490	201,960	403,920	239	169
																											180-299-349	130	50	169	26,910	107,640	215,280	119	89
																		39-80-89	30	9	50	1560	6240	12480	41	29	**336-377-505**	208	128	169	63,336	253,344	506,688	41	89
																											57-176-185	48	9	128	5016	20,064	40,128	119	89
																											51-140-149	42	9	98	3,570	14,280	28,560	89	65
																		33-56-65	24	9	32	924	3696	7392	23	17	**252-275-373**	154	98	121	34,650	138,600	277,200	23	65
																											120-209-241	88	32	121	12,540	50,160	100,320	89	65
																											136-273-305	104	32	169	18,564	74,256	148,512	137	97
																		65-72-97	40	25	32	2340	9360	18720	7	17	**396-403-565**	234	162	169	79,794	319,176	638,352	7	97
																											115-252-277	90	25	162	14,490	57,960	115,920	137	97
																											85-132-157	60	25	72	5,610	22,440	44,880	47	37
																		12-35-37	10	2	25	210	840	1680	23	17	**133-156-205**	84	49	72	8,814	35,256	70,512	23	37
																											16-63-65	14	2	49	504	2,016	4,032	47	37

Following U/c=p:

The U/c=p defines the ***COMMON DIAGONAL*** of the ***GOLDEN TREE QUARE*** to its ***AXIS.***

$$U = s^2 + t^2 = cp$$

$$p = U/c$$

Each **Tertiary Branch** segment has the **SAME *p-value*–AND–equals the previous *c-value*** of the **Branch** from which it came.

That ***p***-value relates back to the previous, larger **Branch** from which it came by multiples of **4**.

The differences, Δ, in the ***p-values***:

Δ25-**12**=13
Δ73-**60**=13 Δ13-**8**=5 Δ5-**4**=1
Δ53-**40**=13
~~~
Δ85-**56**=29
Δ169-**140**=29 Δ29-**24**=5 Δ5-**4**=1
Δ89-**60**=29
~~~
Δ65-**48**=17
Δ97-**80**=17 Δ17-**12**=5 Δ5-**4**=1
Δ37-**20**=17

60+80=140

Δ of Δ's /4=*p* 60/4 - 8/4=13
140/4 - 24/4=29
80/4 - 12/4=17

Table 2h

Key: **PPT=Primitive Pythagorean Triple**; ***r*=even #** such that $r^2/2=st$ where ***s,t*** are Factor Pairs; **A=Area; 4A=4Area; 8A=8Area;** $f=b-a$ & $f^2=(b-a)^2$, as $a^2 + b^2 = c^2 = 4A + f^2 = (8A + f^2) - 4A$ & $U/c=p$. ***The Tree of Pythagorean Triples*** branches from the **3-4-5 PPT** trunk first into a 3-part main branch, each of which further branches into 2nd, 3rd, 4th, …, tertiary branches. Each tertiary follows the lead *f*-value of its predecessor, but is actually formed as an intermediary to the upper and lower branches of which it is a part. All **PPT**s — with no repeats — are to be found. ***Pythagoras*** first discovered the UPPER branch sequence, ***Plato*** (a century later) discovered the LOWER branch sequence. The MIDDLE branch sequence follows as an intermediary, hybrid sequence of the UPPER and LOWER. Using the *Expanded Dickson Method* on the **BBS-ISL Matrix**, every **PPT** branch is accounted for by the previous branch. This is done by enlisting the *r,s,t*,A,4A,8A,*f* associated values. All these values are derived directly from the respective **PTT** by both algebra and geometry. In **Table 2a** we looked at the overall. In **Table 2b**, we examine how the UPPER and LOWER branches (blue) are made from the trunk (red). In **Table 2c**, we see how the MIDDLE branch (red) is formed from the UPPER and LOWER (blue) branches and the trunk (red). As a fractal, this ***Number Pattern Sequence*** that defines the first branchings, continues through the entire tree. **Table 2d** shows BLUE branching to **2nd Tertiary Branches**. **Table 2e** reveals the power of *f*. **Table 2f** tells all. **Table 2g-h** follows **Table 2f** and ***p.***