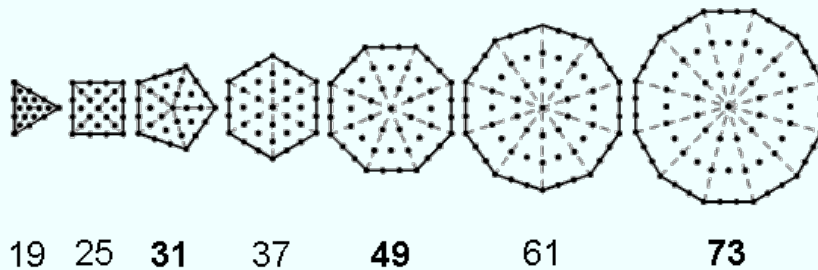
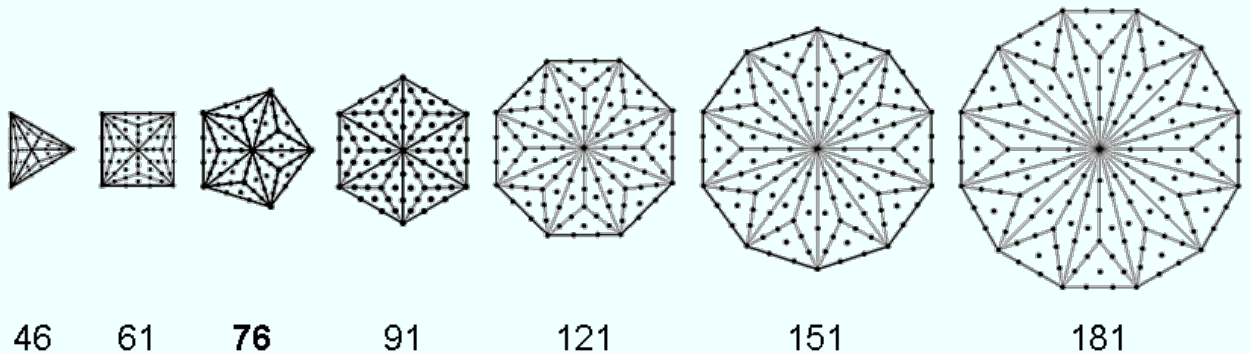


## Collective Properties of the Seven Polygons of the Inner Tree of Life

Yod populations of the seven regular Type A polygons



Yod populations of the seven regular Type B polygons



A Type A  $n$ -gon has  $(6n+1)$  yods. The sum of the first  $(6n+1)$  integers 1, 2, 3, ...  $(6n+1)$  that can be assigned to its yods =  $\frac{1}{2}(6n+1)(6n+2) = (6n+1)(3n+1)$ , so that the arithmetic mean of these integers =  $3n + 1$ . A Type B  $n$ -gon has  $(15n+1)$  yods. The sum of the integers that can be assigned to its yods =  $\frac{1}{2}(15n+1)(15n+2)$ , so that their arithmetic mean =  $(15n+2)/2$ . The arithmetic means are tabulated below for the seven Type A and Type B regular polygons of the inner Tree of Life:

	triangle	square	pentagon	hexagon	octagon	decagon	dodecagon
<b>Type A</b>							
sum of integers =	190	325	<b>496</b>	703	1225	1891	2701
arithmetic mean =	10	13	16	19	25	<b>31</b>	37
<b>Type B</b>							
sum of integers =	<b>1081</b>	1891	2926	4186	7381	11476	16471
arithmetic mean =	23.5	<b>31</b>	38.5	46	61	<b>76</b>	91

For the simplest polygon — the triangle — the average of its 19 integers is 10 (the Pythagorean Decad) when it is Type A. For the Type A decagon, the average of its 61 integers is **31**, the number of EL ("God"), the Godname of Chesed, and for the Type B decagon, the average of its 151 integers is **76**, the number of YAHWEH ELOHIM, which is the Godname of Tiphareth. The sum of the 46 integers in the Type B triangle is **1081**, the number of Tiphareth. The Type B dodecagon embodies the number of Trees in CTOL because the average of its 181 integers is 91. The Type A

pentagon embodies the number **496** of Malkuth as the sum of its **31** integers. This polygon therefore embodies the dimension **496** of the two gauge symmetry groups at the heart of superstring theory. The decagon is unique in having Godname numbers as the arithmetic mean of its integers for both Type A (**31**) and Type B (**76**) versions.

For the Type A polygons, there are 295 integers (seven 1's surrounded by 288 integers), where

$$295 = \frac{1^5 + 2^5 + 3^5 + 4^5 + 5^5}{1 + 2 + 3 + 4 + 5}$$

and  $288 = 1^1 + 2^2 + 3^3 + 4^4$ . Their sum =  $7531 = 1 + 251 \times 30$ . This is generated by assigning the integer 1 to the centre of a Type A pentagon and the number 251 to the 30 yods surrounding it, 251 being the number of yods in the 1-tree with Type A triangles as its 19 triangles. The sum of the 151 internal odd integers in the seven polygons =  $3841 = 1 + 48 \times 80$ . This can be generated by assigning 1 to the centre of a Type A octagon and the number **80** to the **48** yods that surround it. **80** is the number of Yesod and the representation comprises **49** integers, where **49** is the number value of EL ChAI, the Godname of Yesod. The sum of the 144 even integers on the sides of the seven polygons =  $3690 = 369 \times 10$ , where

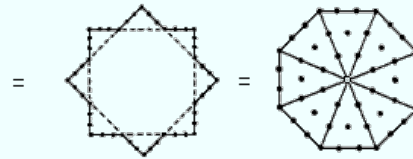
$$369 = 21 + 26 + 50 + 31 + 36 + 76 + 129$$

is the sum of the numbers of the Godnames of the first seven Sephiroth.

Collective properties of the sets of seven Type A polygons and seven Type B polygons are listed below:

### Type A polygons

(1) Number of corners of seven polygons = **48**



This is the counterpart in its inner form of the **48** vertices, lines and triangles making up the outer form of the Tree of Life. **48** is the number of *Kokab*, the Mundane Chakra of Hod. It is a basic parameter of holistic systems embodying the divine archetypes. It appears in superstring theory as the kernel of the number 480 denoting the number of non-zero roots of the gauge symmetry group  $E_8 \times E_8$ . Its representation as the **48** yods on the edge of two interlaced squares (24 yods in each one) illustrates how the Pythagorean Tetrad symbolised by the square defines this important structural parameter of the Tree of Life and Tree of Life patterns. This also expresses the (24+24) division of this number that is characteristic of holistic systems, manifesting in one of the two heterotic superstring theories as the direct product of two similar Lie groups  $E_8$ , each with 240 roots. It manifests in the octagon as the 24 yods on its boundary and as the 24 internal yods surrounding its centre.

(2) Number of corners of **48** tetractyses in seven polygons = 55

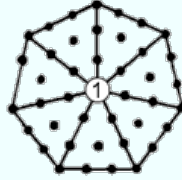
$$\begin{aligned}
 &1 \\
 &2 \ 3 \\
 &= \ 4 \ 5 \ 6 \\
 &7 \ 8 \ 9 \ 20,
 \end{aligned}$$

i.e., it is the *tenth* triangular number.

(3) Number of yods in seven polygons = 295. This is the number of SLs up to Chesed of the **49th** Tree, i.e., it is the number of yods in a **49-sided** polygon. This shows how the number of EL ChAI prescribes the yod population of the seven polygons making up the inner Tree of Life. Its heptagonal

representation:

$$295 =$$



$$(\bullet = 7)$$

reveals its seven-fold character as the number of SLs up to Chesed (seventh Sephirah) of the Tree of Life representing the highest subplane of the highest of the seven planes of consciousness. The central integer 1 denotes the nadir of CTOL.

(4) Number of yods in root edge & seven polygons = 299

$$= \sum_{n=1}^5 (T_n + t_n) = \frac{1^2 + 2^2 + 3^2 + 4^2}{1}$$

where

$$\begin{array}{r}
 1^n \qquad \qquad \qquad 4^n \\
 2^n \ 2^n \qquad \qquad \qquad 3^n \ 3^n \\
 3^n \ 3^n \ 3^n \quad \text{and } t_n = \quad 2^n \ 2^n \ 2^n \\
 4^n \ 4^n \ 4^n \qquad \qquad \qquad 1^n \ 1^n \ 1^n \ 1^n .
 \end{array}
 \qquad
 \begin{array}{l}
 T_n = \\
 \\
 \\
 4^n
 \end{array}$$

This shows how the Pythagorean integers 1, 2, 3 & 4 express the number of SLs in the 49-tree representing the cosmic physical plane.

(5) Number of yods in the seven polygons surrounding their centres = 288

$$\begin{aligned}
 &= 1^1 + 2^2 + 3^3 + 4^4 \\
 &= 1! \times 2! \times 3! \times 4! \\
 &= 2^3 + 4^3 + 6^3 \\
 &= 17^2 - 1 = 3 + 5 + 7 + \dots + 33 \\
 &\qquad \qquad \qquad (33 = 1! + 2! + 3! + 4!)
 \end{aligned}$$

$$\begin{array}{r}
 \mathbf{21} \qquad \qquad \qquad 3 \ 7 \ 13 \qquad \qquad \qquad 3 \qquad 7 \ 13 \\
 \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \mathbf{21} \\
 \\
 27 \qquad \qquad \qquad 5 \ 11 \qquad \qquad \qquad 5 \qquad 11 \ 19 \\
 \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad 19 \ 27 \\
 = \qquad \qquad \qquad + \qquad \qquad \qquad = \\
 \\
 \mathbf{31} \qquad \qquad \qquad 9 \qquad \qquad \qquad 9 \qquad 17 \ 25 \\
 \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad 17 \ 25 \ \mathbf{31} \\
 \\
 33 \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \mathbf{15} \ 23 \ 29 \\
 \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \mathbf{15} \ 23 \ 29 \ 33 \\
 \\
 \mathbf{48} + 240, \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad =
 \end{array}$$

where 48 is the number of corners and

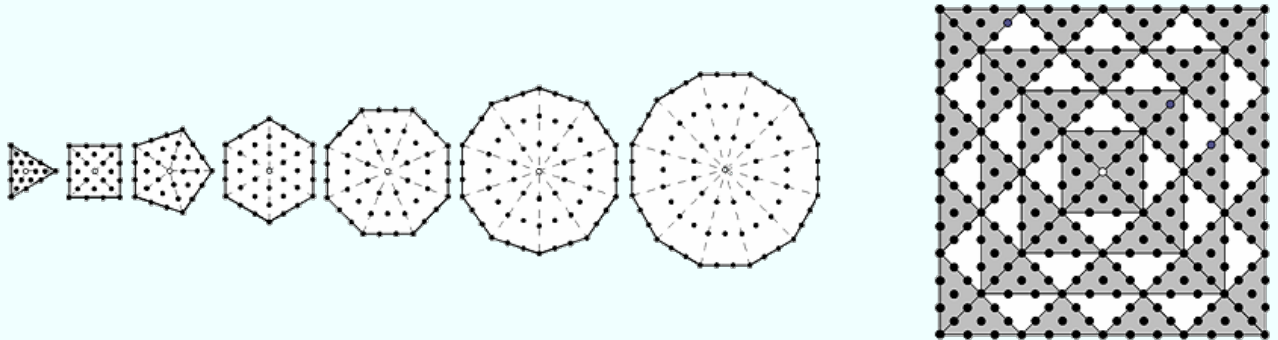
$$\begin{array}{r}
 24 \\
 24 \ 24 \\
 = \quad 24 \ 24 \ 24 \\
 \qquad \qquad \qquad 24 \ 24 \ 24 \ 24
 \end{array}
 \qquad
 \begin{array}{l}
 \\
 \\
 \\
 240
 \end{array}$$

is the number of hexagonal yods in the seven polygons corresponding to Sephiroth of Construction (see [here](#)). 240 is the sum of the 24 permutations of the integers 1, 2, 3 & 4. It is the sum of the numbers of the Godnames of the first six Sephiroth:

$$240 = 21 + 26 + 50 + 31 + 36 + 76$$

It is also the number of roots of the superstring group  $E_8$  (see [here](#)).

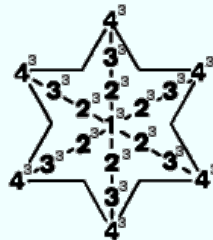
These expressions of beautiful, arithmetic proportion demonstrate *par excellence* how the integers 1, 2, 3 & 4 are the natural basis for representing the populations of the various types of yods in the seven tetractys-divided polygons that make up each half of the inner Tree of Life. The square symbolizing the number 4 determines the number 288 as the sum of a 4x4 square array of the first 16 odd integers after 1 (see also [here](#)). This is also the number of yods that surround a square with 2nd-order tetractyses as its sectors:



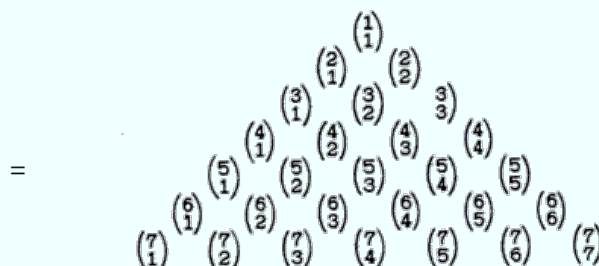
288 yods surround both the centres of the seven Type A polygons and the centre of a square with 2nd-order tetractyses as its sectors

(6) Number of yods in (7+7) polygons surrounding their centres =  $576 = 24^2 = 1^2 \times 2^2 \times 3^2 \times 4^2 = 1 + 3 + 5 + \dots + 47$ , where **36** is the Godname number of Geburah and  $47 (= 21 + 26)$  is the 24 (= 4!)th odd integer and the number of SLs in the 7-tree. It is remarkable that the population of non-central yods in both sets of polygons is determined by this parameter of the 7-tree (the Theosophical "physical plane," or physical universe). The Godname YAH with number value **15** prescribes its SL population because 47 is the **15th** prime number. As  $8 = 4 \times 2$ , the number 576 (=  $288 \times 2$ ) is the number of yods that surround the centre of an octagon with 2nd-order tetractyses as sectors (there are **72** yods per sector and  $576 = 8 \times 72$ ).

(7) Number of yods in the (7+7) polygons & root edge = 594. This is the sum of the cubes of 2, 3 & 4 surrounding the central cube of 1 in the Star of David array:



(8) Number of yods lining sides of the **48** tetractyses in the seven polygons = 247





where **73** is the **21st** prime number and the number of Chokmah ("Wisdom").

(14) Number of boundary yods & centres of the seven polygons =  $144 + 7 = 151$ . This is the **76th** odd integer, where **76** is the number value of YAHWEH ELOHIM, the Godname of Tiphareth.

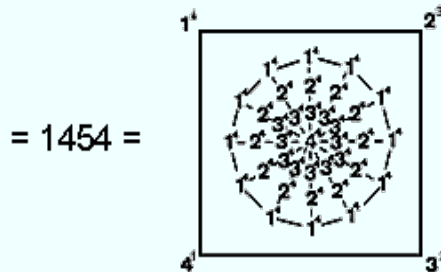
(15) Number of yods in the root edge and inside the seven polygons = **155**. This is also the number of yods in the root edge, at the centres of the polygons and on their boundaries. In keeping with the meaning of Malkuth, the number of ADONAI MELEKH, the Godname of this Sephirah, determines those yods that create the *outer form* of the polygons.

The seven separate Type A polygons consist of 55 corners and 96 sides of **48** triangles, i.e., 199 geometrical elements. This is the 100th odd integer, where  $100 = 10^2$ , showing how the Decad determines the geometrical composition of the inner Tree of Life. 192 geometrical elements surround the centres of the seven polygons. Both sets of polygons comprise 110 corners and 192 sides of 96 triangles, i.e., 398 geometrical elements.  $110 = 10 \times 11$ , where 11 is the 10th integer after 1, showing again how the Decad determines the geometrical composition of the inner Tree of Life. 384 geometrical elements surround the centres of the 14 Type A polygons. This is a parameter of all holistic systems (see [here](#)).

### Type B polygons

(1) Number of yods in the seven Type B polygons = 727, which is the **129th** prime number. In this remarkable way, the Godname number of the generative Sephirah Netzach, the *seventh* Sephirah from the top of the Tree of Life, determines the population of the seven Type B polygons.

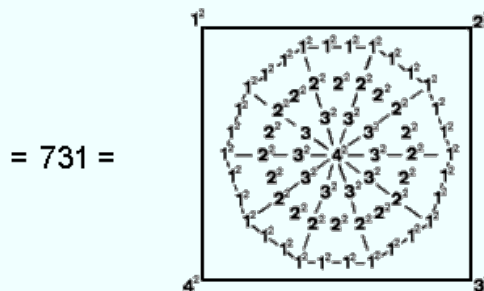
(2) Number of yods in (7+7) Type B polygons =  $2 \times 727$



The number of integers in this representation =  $41 = 26 + 15$ , i.e., the sum of the numbers of the two Godnames of Chokmah.

(3) Two yods of the root edge are associated with each set of polygons. Number of yods in seven polygons +  $\frac{1}{2}$  root edge =  $2 + 727 = 729 = 27^2 = 3^6 = 9^3$ . The number of yods associated with each set of Type B polygons is the cube of the *fourth* odd integer after 1. This illustrates once more the role of the Pythagorean Tetrads in determining the properties of the inner form of the Tree of Life.

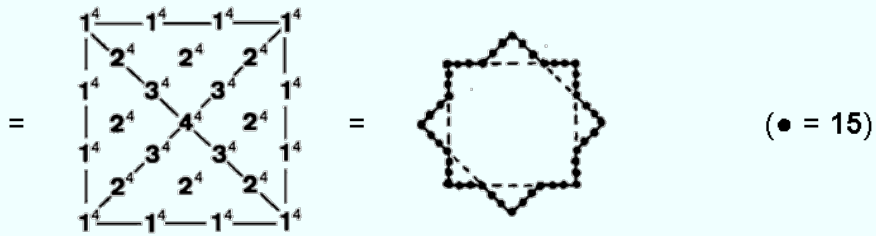
(4) Number of yods in the seven polygons & root edge =  $727 + 4$



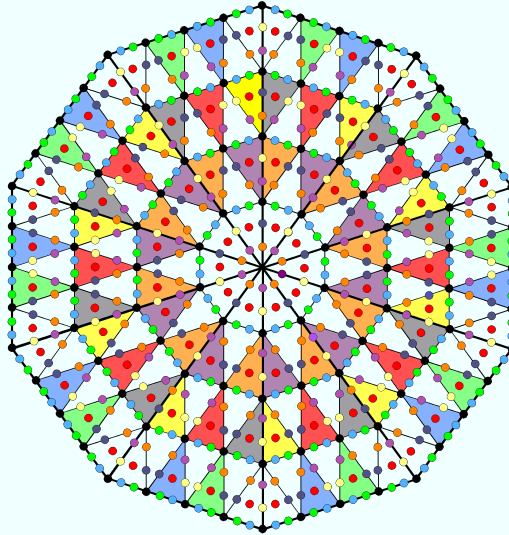
This tetractys-divided decagon with **65** squares of 1, 2, 3 & 4 is the representation of the number of ADONAI (see [here](#)). It is remarkable that, when the squares of the integers 1, 2, 3 & 4 are assigned to its yods, their sum is the number of yods in the seven Type B polygons and the root edge. This is an example of the potent, mathematical archetype of the Godname of Malkuth expressing through its geometrical representation the yod population of the set of Type B polygons and the root edge.

(5) Number of yods in (7+7) polygons & root edge =  $4 + 2 \times 727 = 1458$ .

(6) Number of yods in the seven polygons other than centres =  $727 - 7 = 720 = 1 \times 2 \times 3 \times 4 \times 5 \times 6$

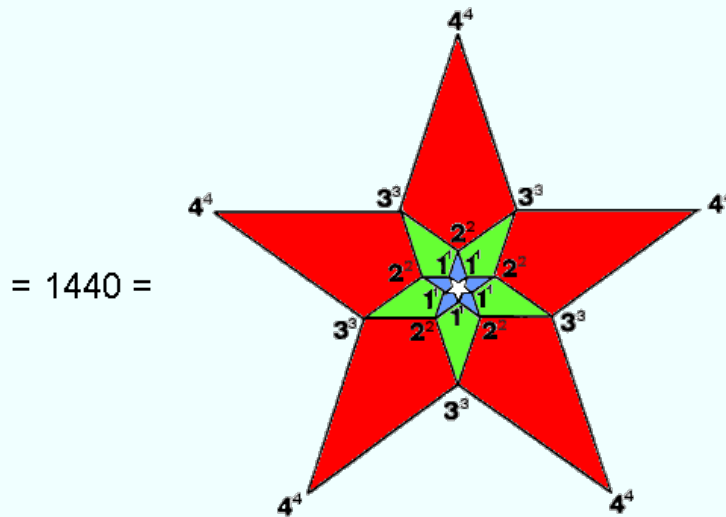


This demonstrates the way in which the Tetrad symbolized by the square expresses yod populations of the seven polygons. We saw in the discussion of the seven Type A polygons that they have as many yods surrounding their centres as a square with 2nd-order tetractyses as its sectors has yods surrounding its centre. Another way in which the Tetrad determines the number 720 is as follows: the *fourth* triangular number is 10, the Decad. This is symbolized by the ten-cornered decagon, which has 720 yods surrounding its centre when its sectors are 2nd-order tetractyses:

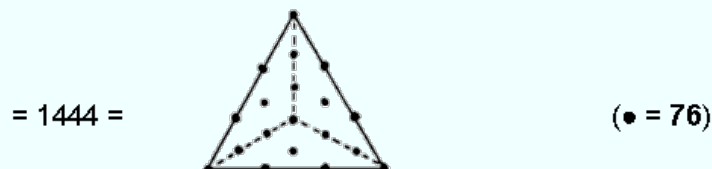


The yod population of the inner form of the ten-fold Tree of Life is embodied, appropriately, in this geometrical symbol for the number 10.

(7) Number of non-central yods in the (7+7) polygons =  $2 \times 720$



(8) Number of non-central yods in the (7+7) polygons & root edge =  $1440 + 4$



This is the number of yods in 76 Type A triangles, illustrating how the mathematical archetype in

YAHWEH ELOHIM prescribes this number. The **65**-tree has 1444 corners & edges of triangles. The Type B division of the (7+7) polygons therefore encodes the *minimum* number of geometrical elements needed to construct the section of CTOL prescribed by the Godname ADONAI of Malkuth. Curiously, the **65**-tree has 133 SLs on its central pillar, where 133 is the dimension of  $E_7$ , the largest, exceptional subgroup of the superstring gauge symmetry group  $E_8$ . The number of non-central yods in the (7+7) Type A polygons & root edge =  $288 + 288 + 4 = 580$ . The extra number of yods in the seven Type B polygons =  $1444 - 580 = 864$

$$= \text{[Diagram of a 7-pointed star polygon]} \quad (\bullet = 1 \times 2 \times 3 \times 4)$$

(9) Number of hexagonal yods in the seven polygons = 624

$$= \text{[Diagram of a 7-pointed star polygon with internal hexagonal yods]} \quad \bullet = \frac{1^5 + 2^5 + 3^5 + 4^5}{1^3 + 2^3 + 3^3 + 4^3}$$

$$= 25^2 - 1 =$$

$$3 + 5 + 7 + \dots + 49,$$

i.e., 624 is the sum of the 24 ( $= 1 \times 2 \times 3 \times 4$ ) odd integers after 1 up to **49**, the Godname number of Yesod, showing how EL ChAI prescribes the number of yods in the seven polygons that are not corners.

(10) Number of hexagonal yods in the (7+7) polygons =  $2 \times 624$

$$= 1248 = \text{[Diagram of two overlapping 7-pointed star polygons]} \quad (\bullet = 26)$$

Compare this with property (6). The two Godname numbers **15** & **26** of Chokmah determine in similar fashion the population of non-central yods in the seven polygons and the population of hexagonal yods in the (7+7) polygons.

(11) The root edge has two hexagonal yods. Number of hexagonal yods in the (7+7) polygons & root edge =  $1248 + 2$

$$= 1250 = \text{[Diagram of a square with internal yods]} \quad (\bullet = 50)$$

This shows how the formative archetype of ELOHIM expresses through the square — the symbol of the Tetrad — the population of yods corresponding to Sephiroth of Construction.

(12) Number of corners of tetractyses in seven polygons = **103**, which is the number of SABAOTH (“Hosts”), part of the Godnames assigned to Netzach and Hod.

(13) Number of internal yods in the seven polygons = 583

$$= \text{[Diagram of a 7-pointed star polygon with a central '7']} \quad (\bullet = 4^2)$$

(the central integer ‘7’ denotes the number of their centres).



(14) Number of yods inside the seven polygons other than their centres =  $583 - 7 = 576 = 1^2 \times 2^2 \times 3^2 \times 4^2$ . This illustrates *par excellence* the basic role of the Pythagorean Tetrad and the integers 1, 2, 3 & 4 in expressing properties of the inner form of the Tree of Life. There are 576 yods surrounding the centres of the (7+7) Type A polygons (see (6) in the discussion of Type A polygons).

The seven Type B polygons consist of **103** corners & 240 sides of 144 triangles, i.e., 487 geometrical elements, where **103** is the number value of SABAOTH ("Hosts"), part of the Godnames of Netzach and Hod. Including the root edge made up of two endpoints and a straight line makes a total of 490 (=49×10) geometrical elements. This shows how EL ChAI, the Godname of Yesod with number value **49**, prescribes the geometry of the root edge and the seven separate Type B polygons. Surrounding their seven centres are 96 corners & 240 sides of 144 triangles, i.e., 480 geometrical elements made up of 240 corners & triangles and 240 sides. This 240:240 division is the geometrical counterpart of the 480 roots of  $E_8 \times E_8$ , compounded from 240 roots of each Lie group  $E_8$ .

Here is remarkable evidence that the inner Tree of Life has properties that are analogous to the group composition of  $E_8 \times E_8$ , one of the two gauge symmetry groups describing the unified force between heterotic superstrings. Moreover, the seven Type B polygons have 336 corners & sides surrounding their centres, as well as 384 sides & triangles. Both these numbers are parameters of holistic systems, e.g., we saw earlier that 384 corners, sides & triangles surround the centres of the 14 separate Type A polygons and that the table of **64** hexagrams in the I Ching system of divination has 384 lines & broken lines, whilst 336 is a structural parameter of the UPA remote-viewed by Besant & Leadbeater, being the number of circularly polarized oscillations made in a revolution around its spin axis of each of its ten string-like whorls, encodings of which in sacred geometries are discussed in the section **Superstrings as sacred geometry** (for more examples of these holistic parameters in sacred geometries, see **The holistic pattern**). We therefore see that the seven Type B polygons embody both the group-theoretical parameters of  $E_8$  and  $E_8 \times E_8$  and the structural parameter of the basic unit of matter that was first described paranormally 116 years ago and which was identified by the author over 12 years ago in his book "[ESP of Quarks & Superstrings](#)" as the spin- $\frac{1}{2}$  subquark state of the  $E_8 \times E_8$  heterotic superstring. Anyone who believes *that* is a coincidence also believes in miracles!

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