SYMMETRY FESTIVAL 2006
BUDAPEST HUNGARY

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Figure 3

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Figure 4

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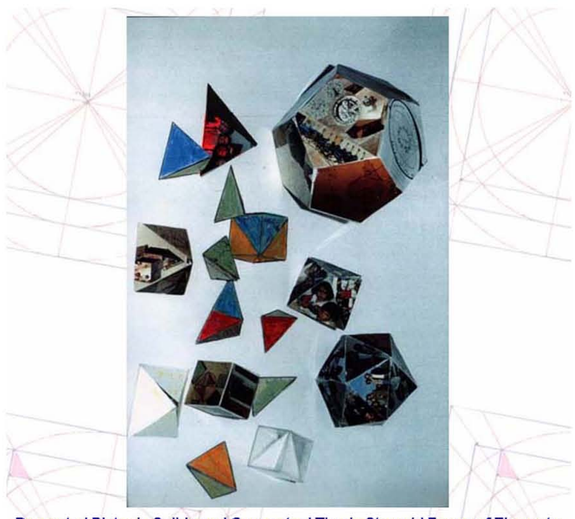

Figure 15

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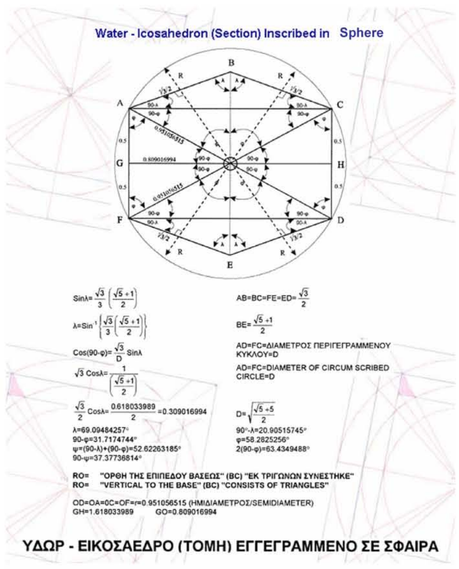

Figure 14

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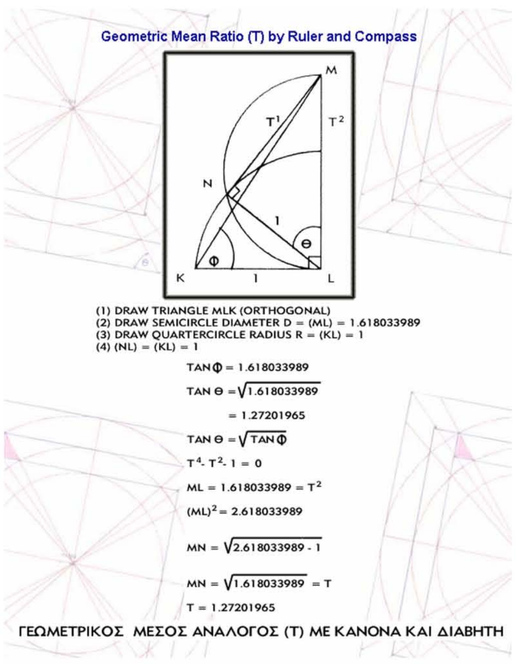

Figure 5

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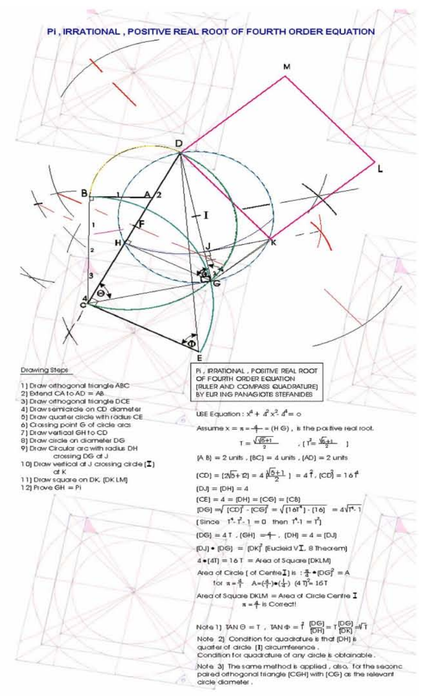

Figure 8

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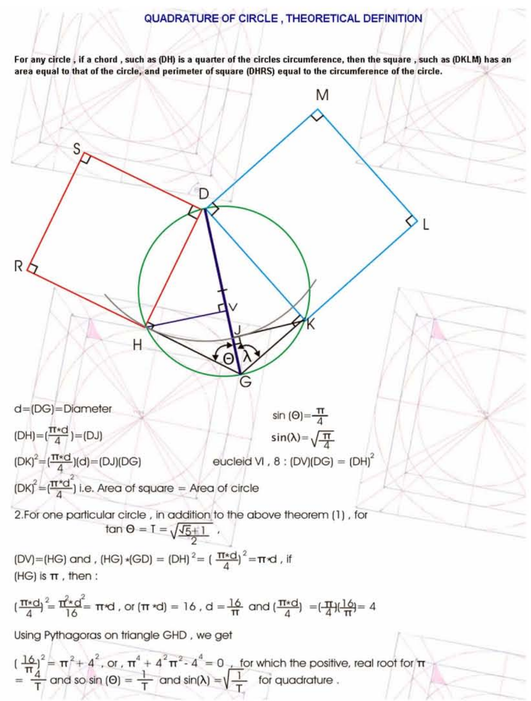

Figure 9

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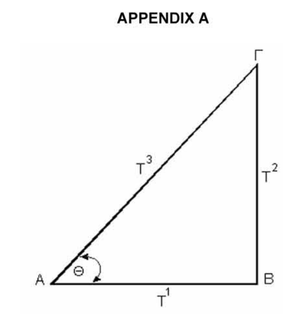

Figure 1

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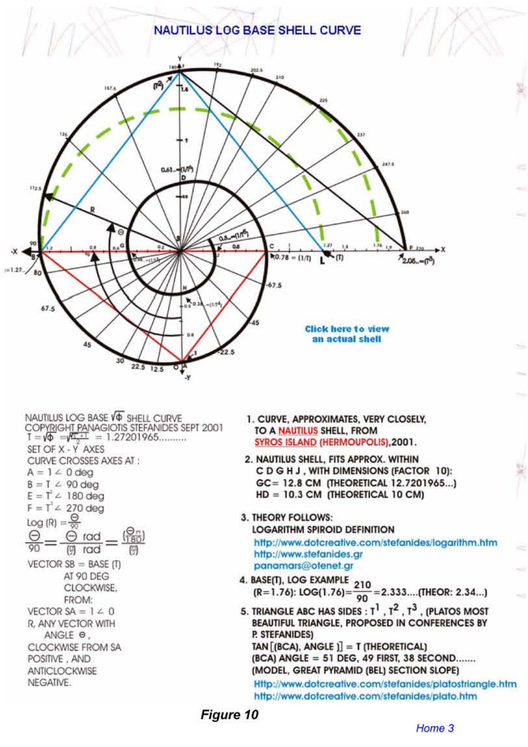

Figure 10

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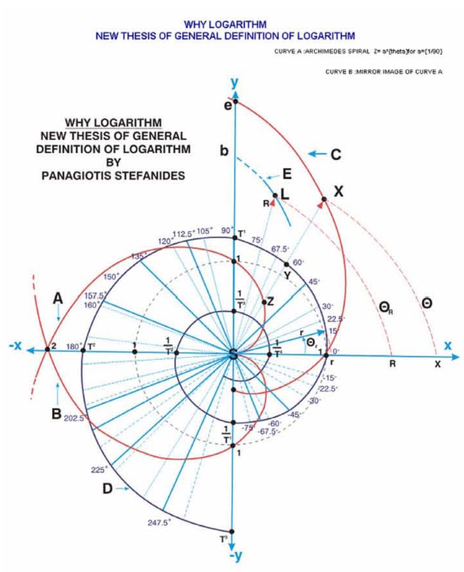

Figure 12

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$$T = \sqrt{\frac{\sqrt{5}+1}{2}}$$

E: BASE b LOGARITHMIC SPIRAL OF PHASORS
(FOR b=1 SPIRAL DEGENERATES TO A CIRCLE OF RADIUS 1)

$$\log_e X = \log_T Y = Z = \frac{\Theta_{DEG}}{90_{DEG}}$$

$$X = e^{(\Theta/90)} = 1+[\Theta/90] + \frac{[\Theta/90]^2}{2!} + \frac{[\Theta/90]^3}{3!} + \ldots$$

$$X = 1 + \log_e X + \frac{[\log_e X]^2}{2!} + \frac{[\log_e X]^3}{3!} + \ldots$$

$$Y = T^{(\log_e X)}$$

$$\log_e Y = \log_e X \bullet \log_e T$$

$$Y = e^{[\log_e X \bullet \log_e T]}$$

$$Y = 1 + [\log_e X \bullet \log_e T] + \frac{[\log_e X \bullet \log_e T]^2}{2!} + \ldots$$

L: POINT ON SPIRAL, E, BASE b, PHASOR R

$$Re^{i\Theta_R} = b^{(\Theta_n/90)} \text{ AND } R^n e^{(in\Theta_n)} = b^{(n\Theta_n/90)}$$

NOTES:
1) ANY POINT ON THE X-Y PLANE MAY, THUS, BE DEFINED
2) $Re^{i\Theta_R}$ IS MULTIVALUED, AND, COMPLEX
3) $b^{(\Theta_n/90)}$ IS SINGLE VALUED, AND, REAL!
4) Θ IN DEGREES, AND 90, IN DEGREES
5) BASES < 1 : HAVE PESITIVE LOGARITHM FOR NUMBERS < 1 AND VICE VERSA.
6) X IS A REPRESENTATIVE PHASOR OF Θ DEGREES FROM THE POSITIVE X AXIS, HAVING A LENGTH OF SX, WHICH IS A REAL POSITIVE NUMBER ON THE X AXIS.

Figure 13

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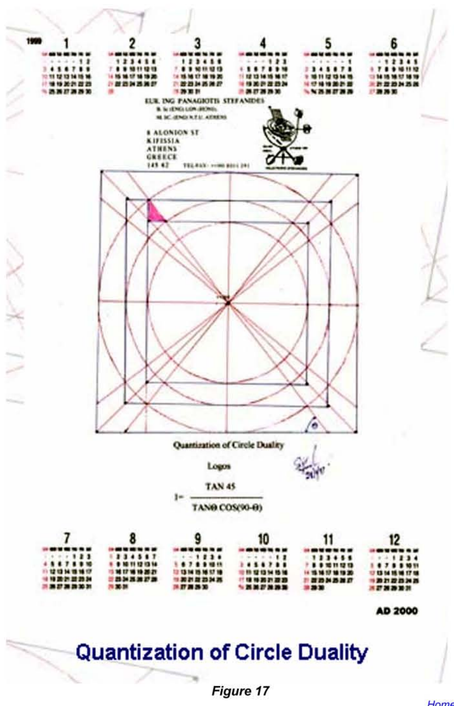

Figure 17

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P. STEFANIDES "GOLDEN ROOT SYMMETRIES OF GEOMETRIC FORMS"