

**Guide to Lecture 20: Sacred Geometry Part 2**

A) **The  $\sqrt{5}$  and Phi ( $\Phi$ )**

- i) **Proportion.** Proportions have three or four terms. Three-term proportion:  $a:b::b:c$ . Four-term proportion:  $a:b::c:d$ . Phi is based on a three-term proportion where the third term is the relation of the previous two:  $a:b:b:(a+b)$ .
- ii) **Relation to thought and Logic.** Aristotelian syllogisms are like proportions; a thought is not complete unless it has a proportional structure; if the universe is number and structural then we can only know it through proportional thought:

**A : B**

**B : C**

**A : C**

**Socrates is a man**

**All men are mortal**

**Socrates is mortal**

- iii) **Phi: its concept and construction with the pentagon (see construction in worksheet below).** Phi expresses a distinction in a unity; the relation of one part to another is like the relation of the other to the relation it has within the unity. The series of ratios in Phi constructions always involve Phi and One, whereas those of the  $\sqrt{2}$  involve increasing numbers:

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$$\frac{1}{\varphi^3} : \frac{1}{\varphi^2} :: \frac{1}{\varphi^2} : \frac{1}{\varphi} :: \frac{1}{\varphi} : 1 :: 1 : \varphi :: \varphi : \varphi^2 :: \varphi^2 : \varphi^3 \dots$$

$$1 : \sqrt{2} :: \sqrt{2} : 2 :: 2 : 2\sqrt{2} :: 2\sqrt{2} : 4 :: 4 : 4\sqrt{2} \dots$$

- iv) **Esoteric connections with Phi.** Theological connection to the Christian Trinity. Active self-division and self-relation. Connection with the Golden Dawn altar, and the use of the Pentagram to represent the human being and the microcosm; also the Rose of Creation in the Rose Cross symbol.
- v) **Fibonacci and other series; Phi in nature.** Any series with the Fibonacci pattern will contain ratios that soon approximate Phi:

Fibonacci: 1, 1, 2, 3, 5, 8, 13, 21, 34, 55, 89, 144, 233, 377, 610...

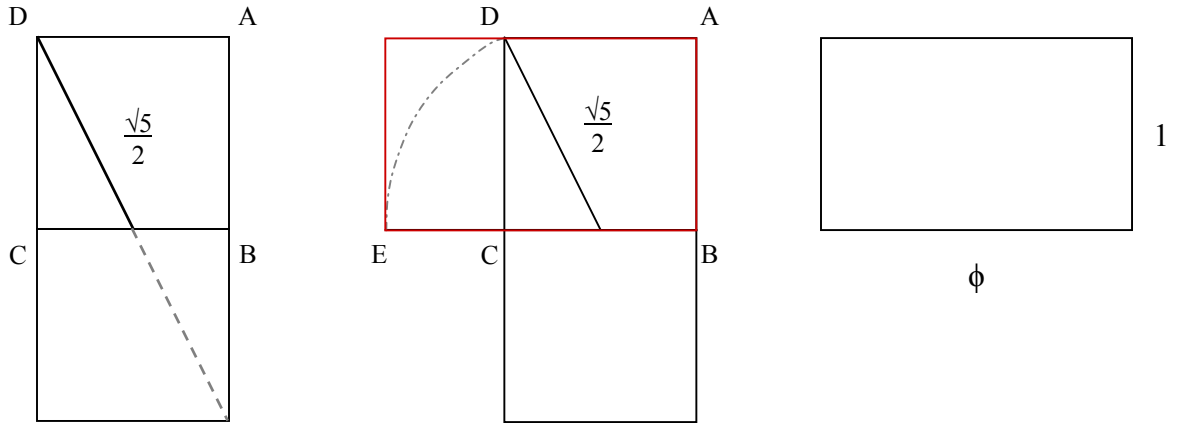
Dykes: 7, 8, 15, 23, 38, 61, 99, 160...

**B) Side-Diagonal numbers.** Triangles and rational numbers used to approximate  $\sqrt{2}$  and  $90^\circ$  (see worksheet). Connection to Aristotle’s ethical doctrine of the “mean.”

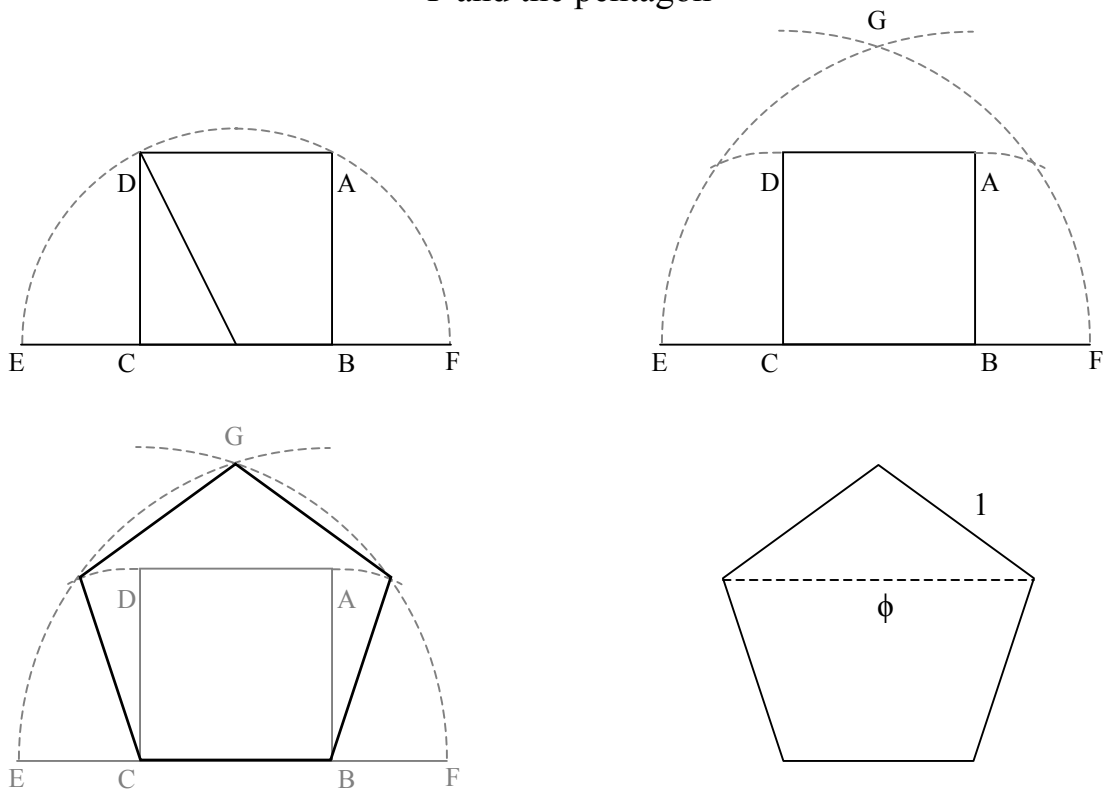
# $\Phi$ and the Golden Rectangle

$$\Phi = \frac{\sqrt{5}+1}{2} \text{ and } \approx 1.618$$

$\Phi$  from the double rectangle



$\Phi$  and the pentagon



# Side and Diagonal Numbers

Diag	Side	Angle
1	1	60°
3	2	97.18°
7	5	88.85°
17	12	90.19°
41	29	89.96°
99	70	90.005°

Formula:  $2x^2 - y^2 = \pm 1$

