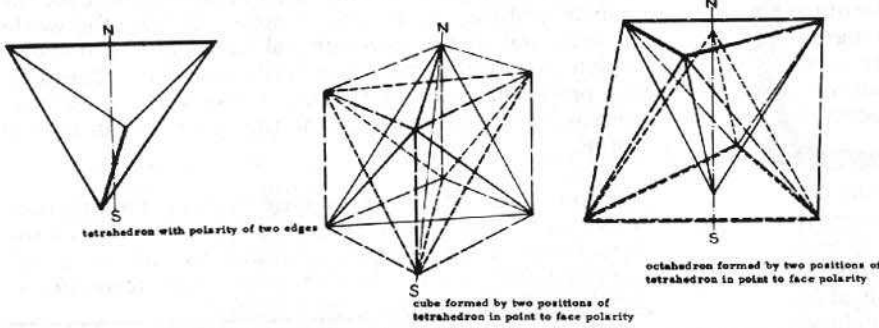
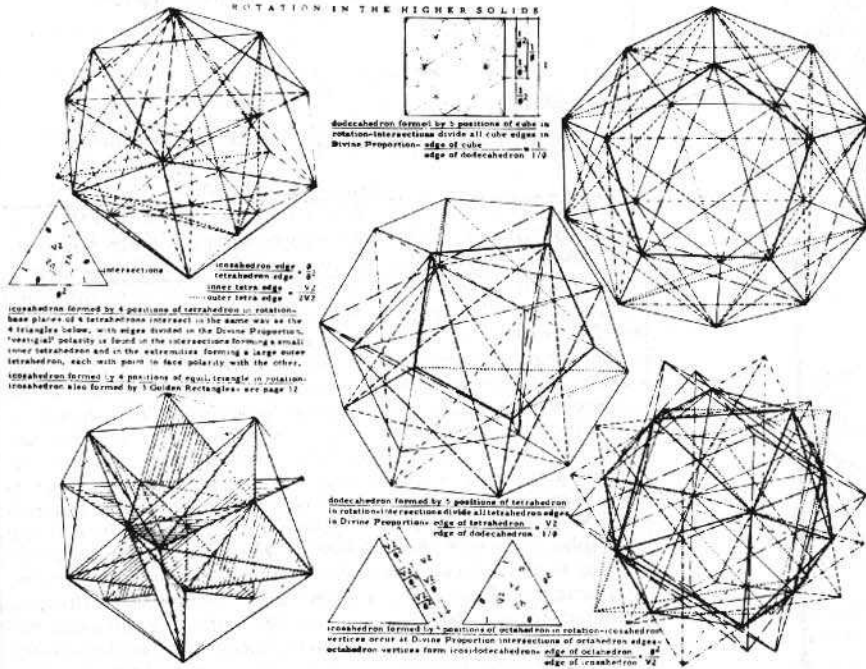


point to face *polarity*, can establish the corners of a cube. Two other positions of a tetrahedron, also in *polarity*, define the corners of an octahedron. These three simpler Platonic Solids—the tetrahedron, the cube, and octahedron—represent the *bilateral* forms of the geometric progression. The cube in five positions, in *rotation*, defines the twenty corners of the dodecahedron, and five positions of the octahedron, again in *rotation*, establish the twelve corners of the icosahedron. The tetrahedron in four positions, with *rotational* ordering, also defines the twelve corners of the icosahedron and, in addition, one corner of each of the four positions extend beyond the icosahedron to form the corners of a larger tetrahedron, disclosing a 'vestigial' polarity in this arrangement. These more complex of the Platonic Solids, the dodecahedron and icosahedron, represent the stage of *rotational* forms in the geometric progression and, in the way they are formed, express Divine Proportion ratios (1:1.618) in their relation to the simpler solids, the dodecahedron to the cube and the icosahedron to the octahedron.

POLARITY OF THE SIMPLER SOLIDS



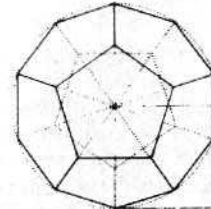
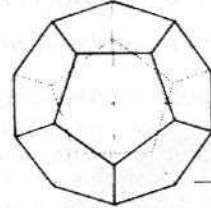
ROTATION IN THE HIGHER SOLIDS



HELICAL EXTENSION OF ROTATION

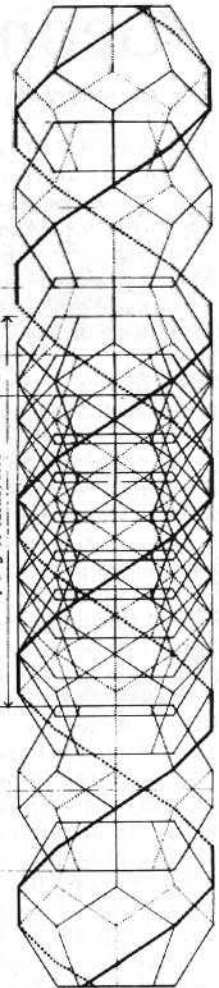
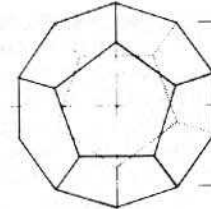
helical extension of dodecahedron (or icosahedron) along the axis perpendicular to axis of rotation can define double helix similar to the structure of DNA molecule

plan below of even numbered turns



rotating dodecahedron forms decagon with 10 turns/circumference—in each turn a Divine Proportion progression—vertical increment of turn = ϕ , horizontal increment of turn = ϕ^2 , radius of turn = ϕ^3

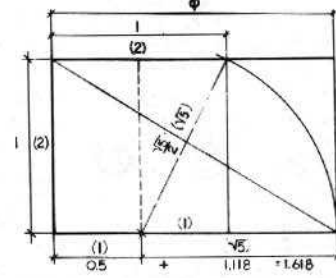
plan below of odd numbered turns



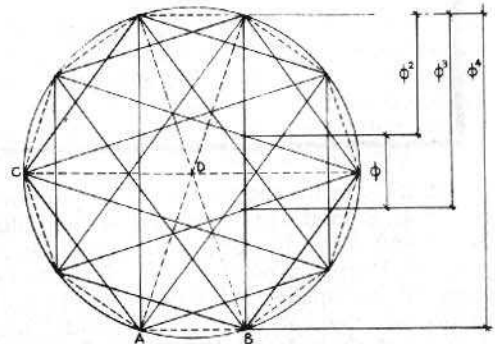
$$\phi = 1 + \frac{1}{1 + \frac{1}{1 + \frac{1}{1 + \frac{1}{1 + \dots}}}}$$

$$\phi = \frac{1 + \sqrt{5}}{2} = 1.618\dots$$

The Divine Proportion



Construction of the Golden Rectangle



$\frac{AB}{CD} = \frac{\text{side of dodecahedron}}{\text{radius}} = \frac{1}{\phi}$ line segments of pentagram in a Divine Proportion progression

The 'fourth dimensional' extension of these *rotational* forms along an axis perpendicular to the radius of rotation, expressing again the *tension of polarity*, defines the *helical* forms of the geometric progression. Since both of the *rotational* forms have pentagonal symmetry around a center, the plan of their *helical* extensions is based on the decagon with its side in Divine Proportion to its 'radius' (of the circumscribed circle). The vertical extension of each turn is in Divine Proportion ratio to the side of the decagon, making a Divine Proportion—vertical turn = ϕ , horizontal turn = ϕ^2 , and radius of turn = ϕ^3 .