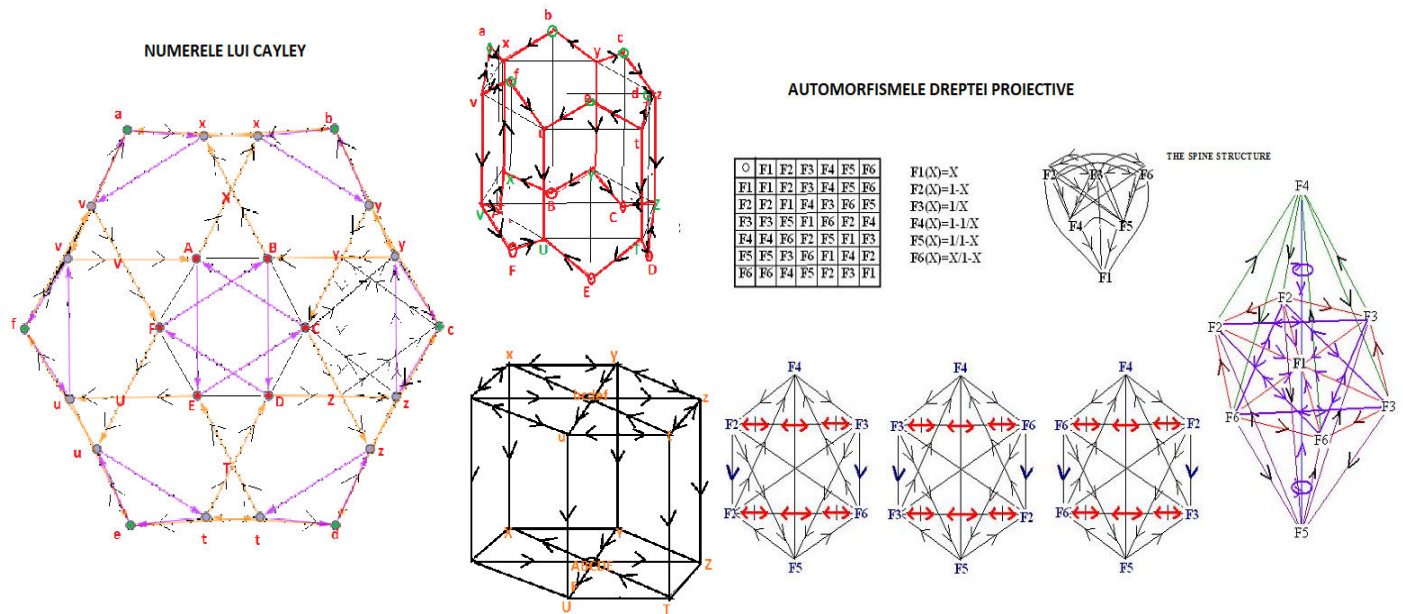


58.PROJECTIVE AUTOMORPHISM AND CAYLEY'S NUMBERS

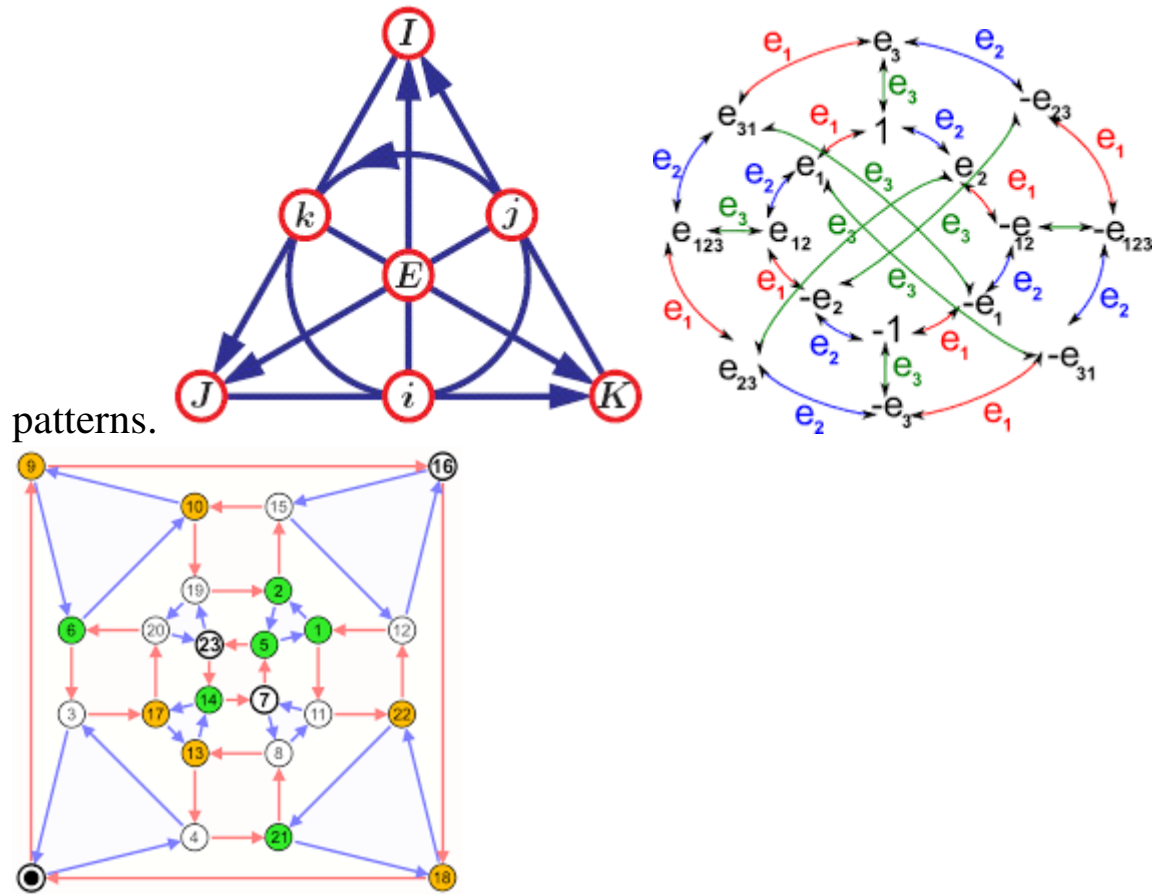
The formal approach to Cayley's numbers is schematic, as shown in the figure below. As the formal approach allows the operation of the patterns to be worked on, another form of number structuring is obtained, which eventually reaches a form of hexagonal prism with properties given by the vector meanings.



The same situation is encountered in operations with projective automorphisms. By operating and designing the composition table in another form, we obtain in the informal approach another form that represents a mathematical or physical law.

Pattern recognition and informal interpretation become the most important working tools, which are often confirmed by the structures of nature, which we begin to understand.

The diagrams below in number theory show the importance of pattern recognition. On the other hand, semantic informal translation can give us an understanding of the functionalities hidden behind the



patterns.

The different types of directed graphs can cover very different fields of study. One of these fields is given by the multicursal diagrams that are the basis for generating feedback specific to algebraic fractals, the feedback theory being much more diverse. The class of these special feedbacks is the basis for understanding certain categories of phenomena.

The study of the coherent information space, based on different types of examples, shows us that multicursal diagrams, sustainable or metabolic fractolons, feedback at different levels, granulation levels and other tools in algebraic fractal theory can be applied in different contexts.

The vectorial geometric approach of the operations leads us to the possibility of packing some information in geometric forms that represent realities of the known universe. It is possible the existence and

the inverse process, that of deciphering the forms and deducing the internal information structures, starting from an extremely careful analysis of the reality and establishing data libraries with functional patterns connected by different forms.

For the moment, this science is still in its early stage, but the qualitative approaches possible are similar to those made by nature's intelligence in creating links between forms and functionalities.

Non-formal operations such as bending a figure and arranging it in another position can reveal unexpected properties, which relate to relationships and not to numbers and calculations.

Creative and experimental thinking usually finds methods and means of solving some situations and problems by avoiding formal logic and executing complex constructions that lead to the result. These complex structures that break patterns of thinking and break symmetries are characteristic of the human brain as well. It has the two cerebral hemispheres structured oppositely and complementarily: the left is formal, the right is creative.