

# GEOMETRICIAN'S VIEWS

## TOPIC: FRIEZE



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### Mathematical View



If we were to give a simple definition of the frieze, we would say that it is an ornament, often in the form of a band.

**What are friezes?** The friezes are those horizontal bands, presenting an identical motif that is repeated on the entire circumference of the vessel. They have different shapes. Passing from one epoch to another, it is observed that different motives appear.

If we analyse the **frieze patterns**, we find that they can be divided into **seven categories**, each associated with a group of different geometric transformations that leave the patterns unchanged.

Researcher, Ioan Fechet



### Artistic View



Usually, a frieze is a pattern that repeats itself periodically in a given direction. This concept shapes the friezes used in architecture or decoration.

**We also find friezes in folk art.** For example, if you visit the workshops of folk craftsmen in the Beiuș area (Romania), you will admire the technique of cutting (shallow) in the wood mass, also called notching (<https://stiribihor.info/2020/11/la-doar-23-de-ani-simon-nistor-takes-away-the-tradition-of-the-dowry-boxes-from-the-budureasa/>)

Most families in our area can admire frieze patterns on the traditional towels inherited from their ancestors. *Below are two examples of traditional towels from Bihor.*



The artists, Liana and Pavel Bența

### Common View

*Example of frieze*

Depending on the isometries that leave a frieze invariant, they fall into the following categories:

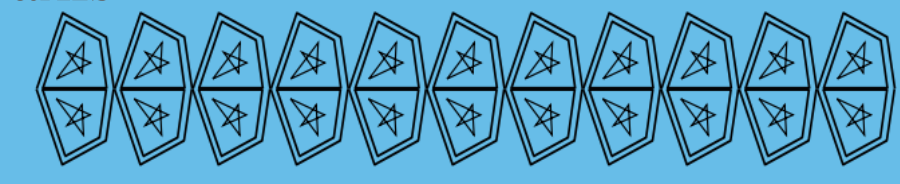
F1. Friezes generated by a translation



F2. Friezes generated by a sliding symmetry



F3. Friezes generated by a translation and symmetry with against the horizontal axis



F4. Friezes generated by a translation and symmetry against the vertical axis



F5. Friezes generated by a 180 degree translation and rotation



F6. Friezes generated by symmetry against the vertical axis and symmetry by sliding



F7. Friezes generated by a translation, symmetry against the vertical axis and symmetry against the horizontal axis



artists, researcher, teachers involved in the project

