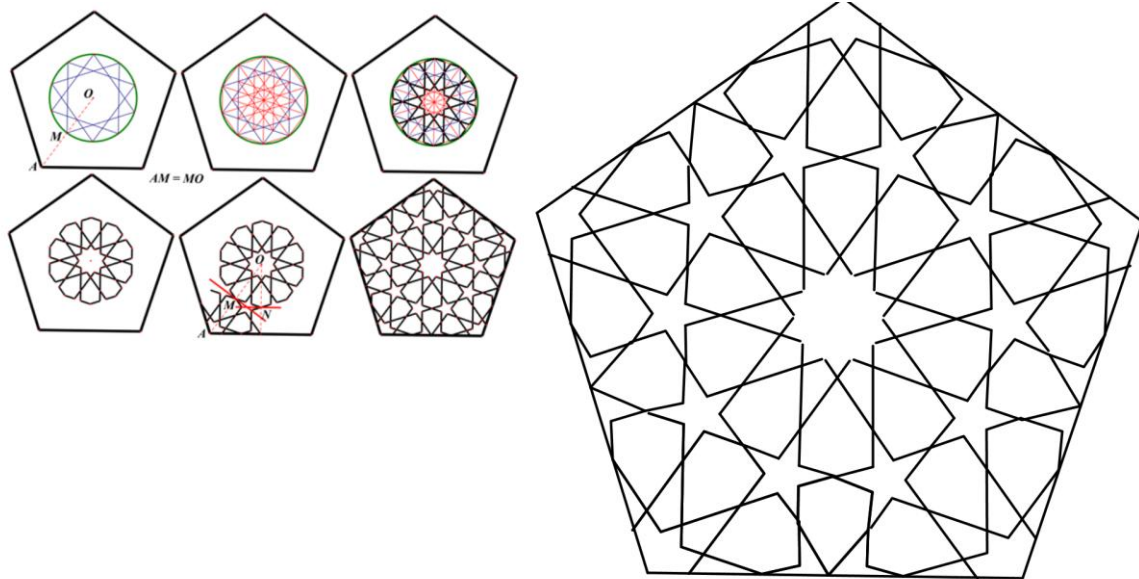


**FILL THE GAP!**

**GeoGebra Action Package (GAP) for the ADVENTURES ON PAPER exercise book**

***Reza Sarhangi: Decorating Regular Polyhedra Using Historical Persian Interlocking Star Polygonal Patterns***

**Exercise:** Constructing Mirza Akbar's decorated pentagon



Following the steps in the inserted figure, construct the pentagon. All segments, broken lines are constructed only once, then these are mirrored and rotated 10 times  $36^\circ$  or 5 times  $72^\circ$  as needed. This way we make up lists and the shapes (points, segments, broken lines), these lists can be colored, formatted together.

Creating a point list:  $\text{Sequence}[\text{Rotation}[D, i * 36^\circ, C], i, 1, 9]$ , D point is rotated 9 times  $36^\circ$ , rotation center is 'C'. The segment, or broken line list can be created on the same way. In that case, instead of the letter of the point (here: D) there is the letter of the segment or broken line.