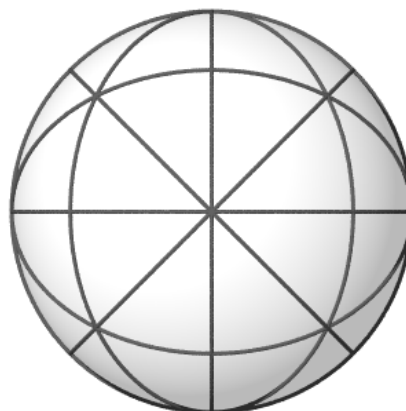
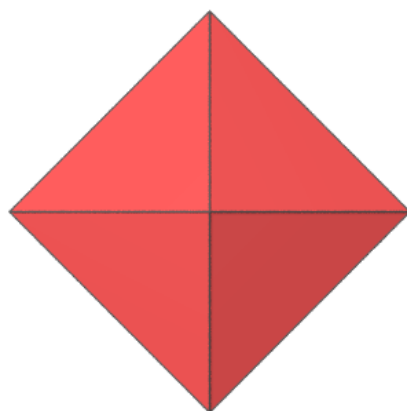
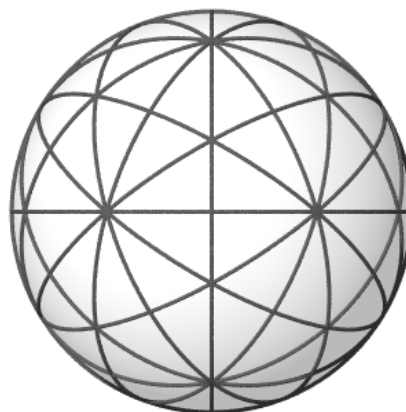
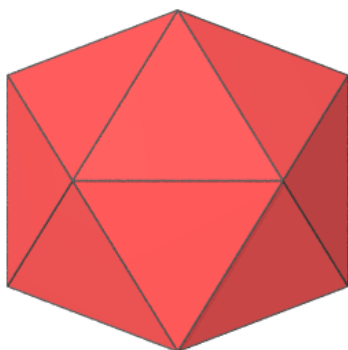


(a)



(b)



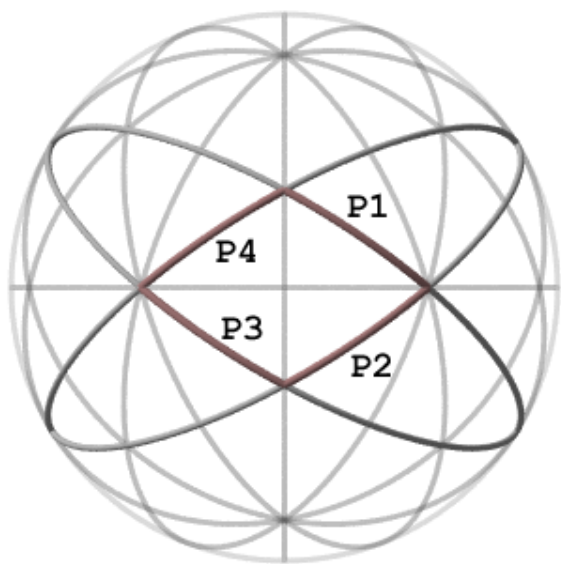
(c)

**Fig.1** Symmetry planes of selected symmetry groups:

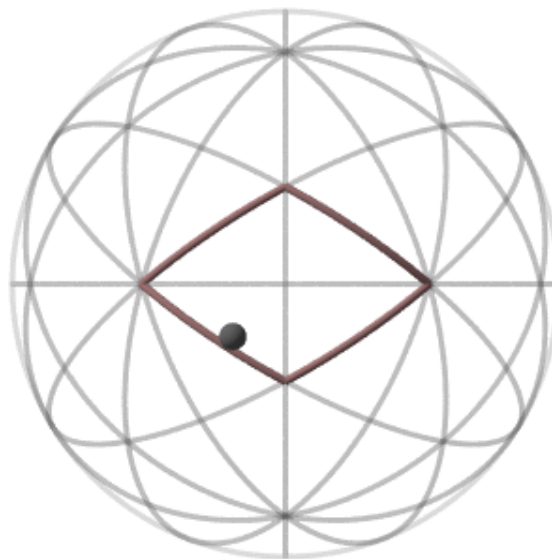
a) Tetrahedral  $T_d$

b) Octahedral  $O_h$

c) Icosahedral  $I_h$



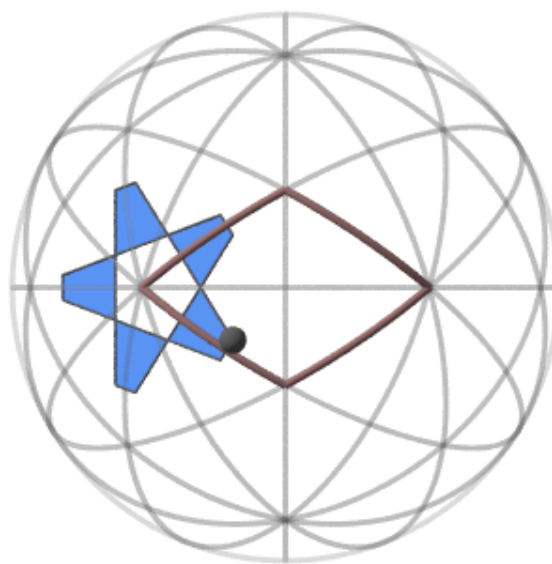
**Fig.2** A kaleidoscope is formed by a sequence of symmetry planes.



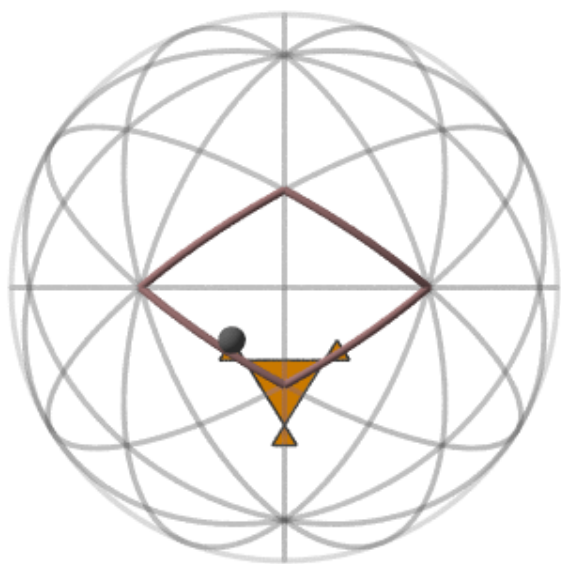
**Fig.3** A generator vertex on the sphere.



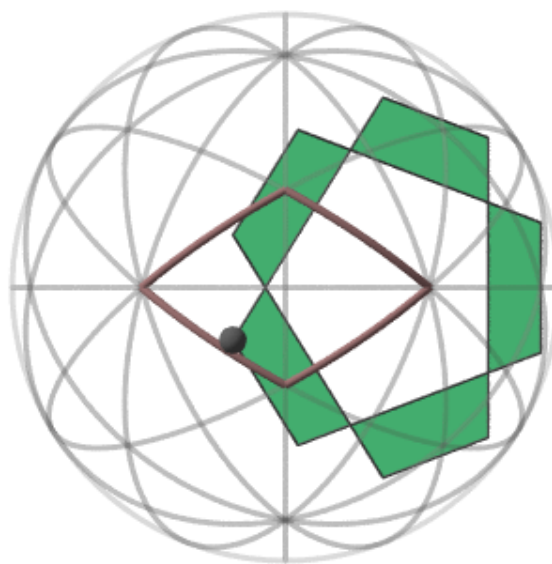
**Fig.4a** The face formed by reflections in the symmetry planes  $P4$  and  $P1$ .



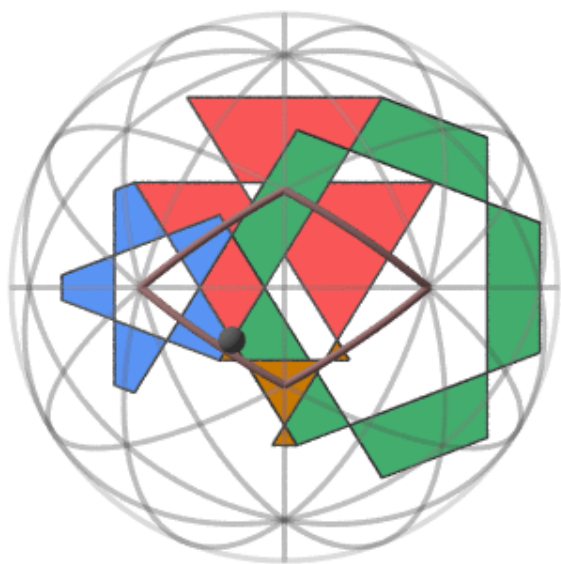
**Fig.4b** The face formed by reflections in the symmetry planes  $P3$  and  $P4$ .



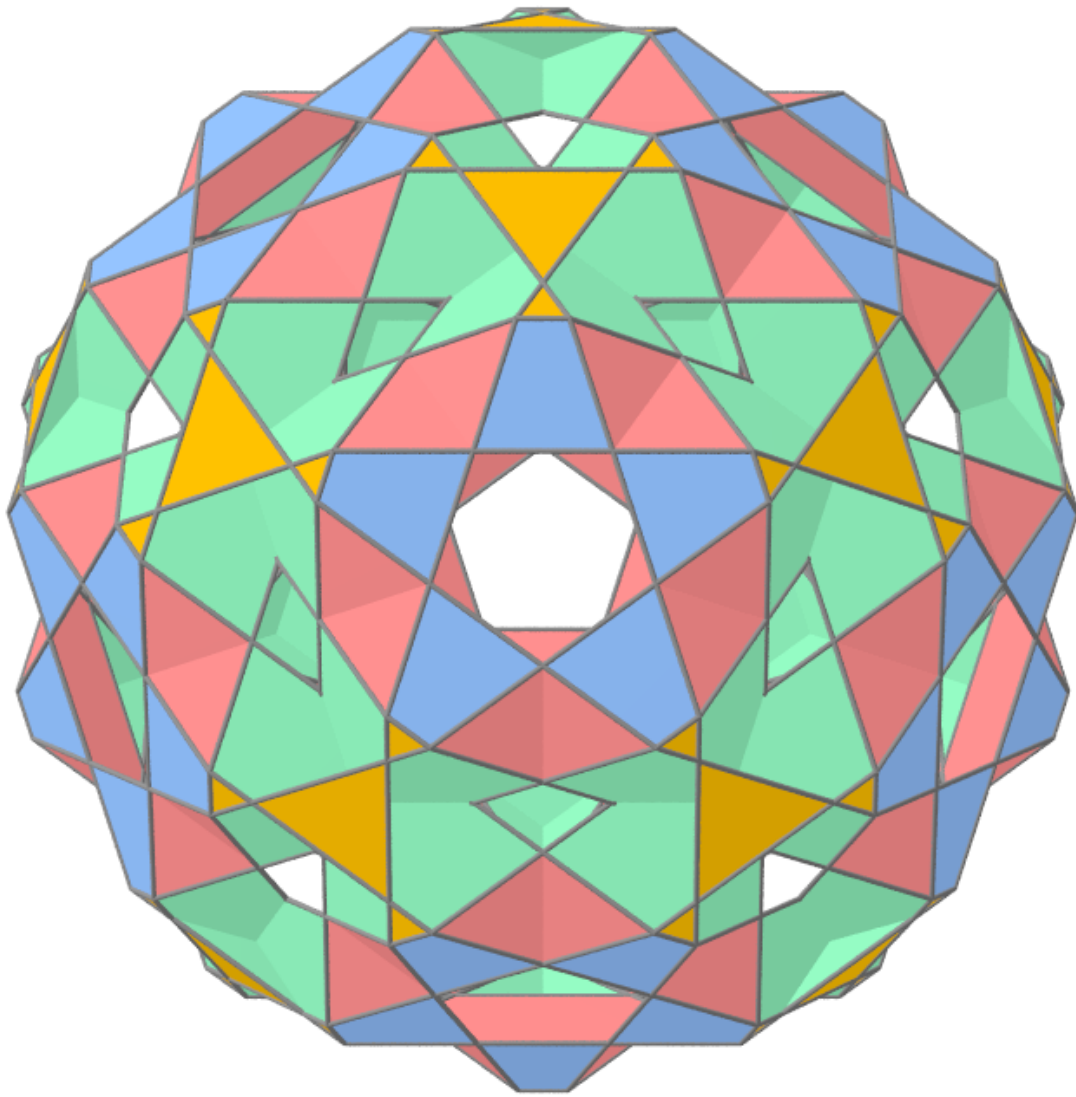
**Fig.4c** The face formed by reflections in the symmetry planes  $P_2$  and  $P_3$ .



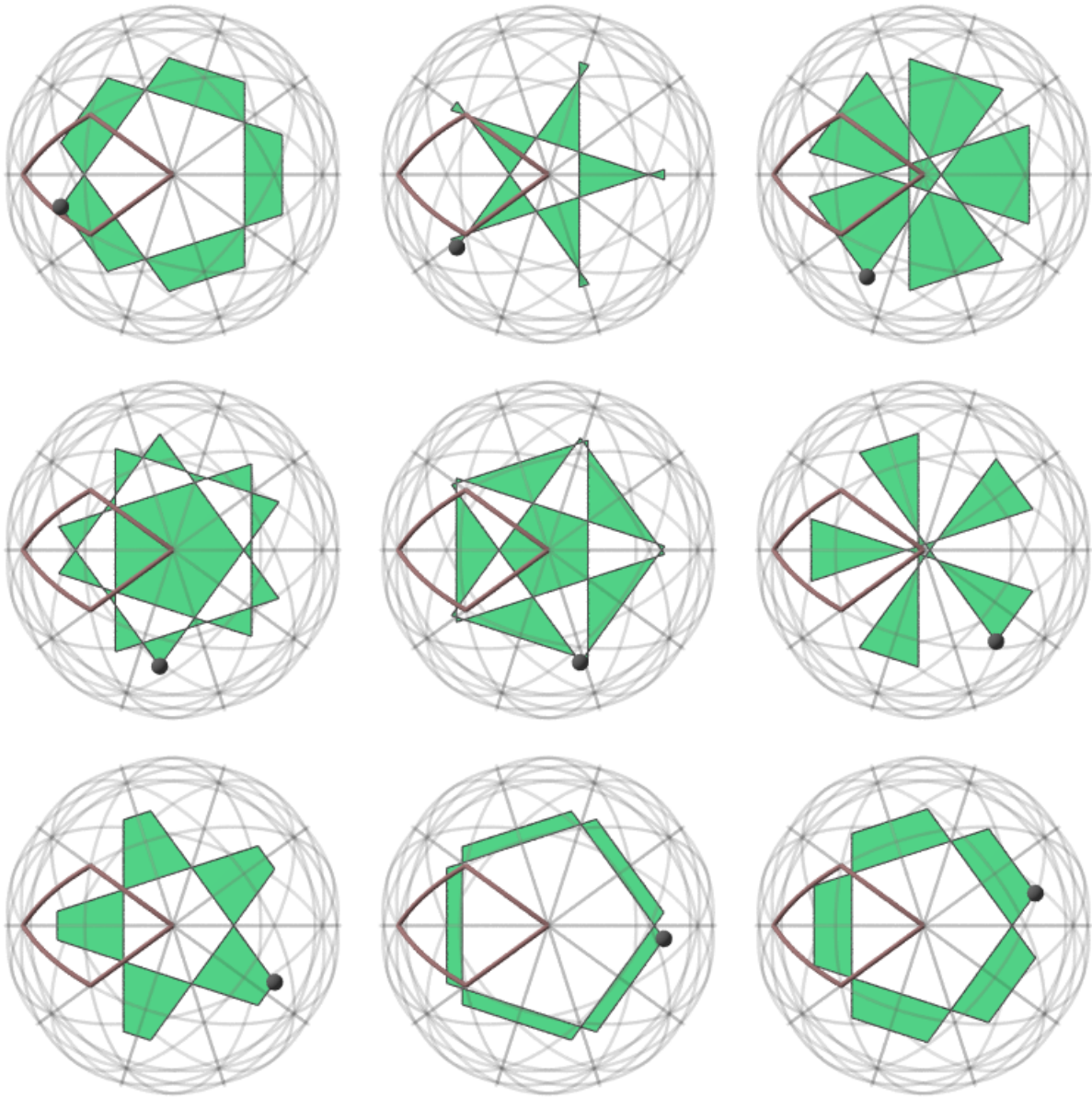
**Fig.4d** The face formed by reflections in the symmetry planes  $P_1$  and  $P_2$ .



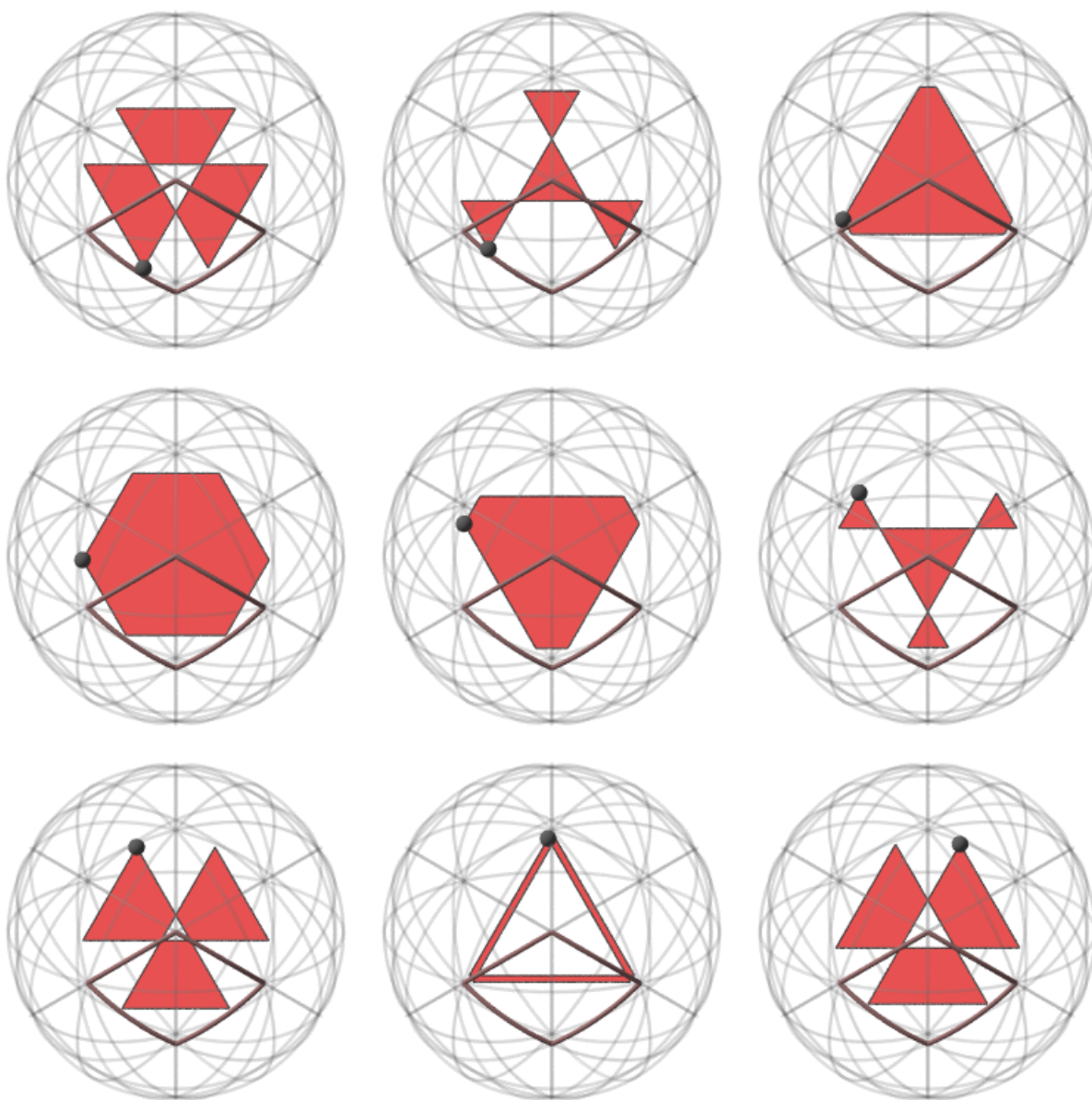
**Fig.5** All the faces containing the generator vertex.



*Fig.6 Completed kaleidoscopical polyhedron (Polyhedron's 5-fold axis is turned to the viewer).*

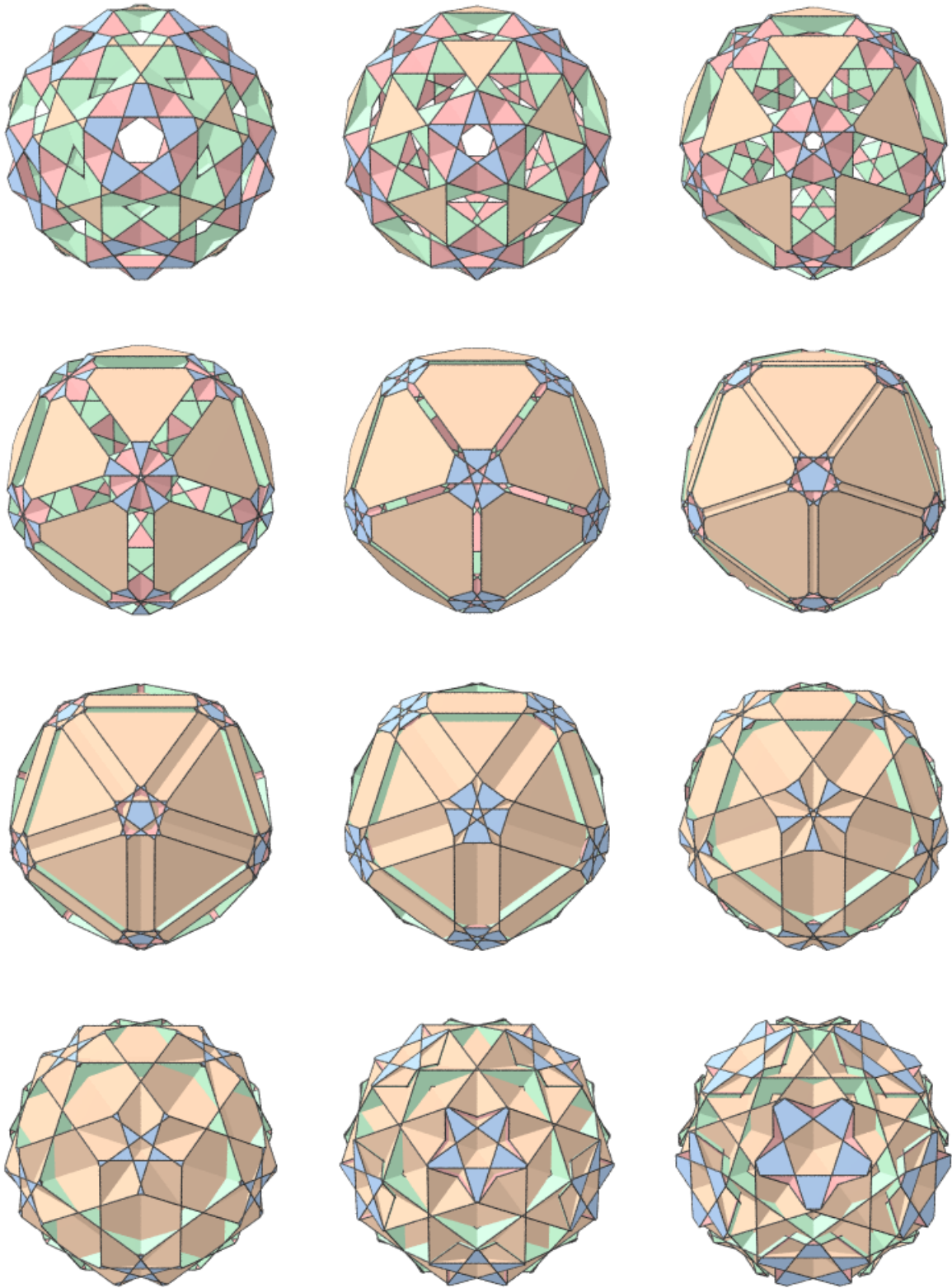


*Fig.7a Metamorphosis of a kaleidoscopic decagon formed by reflections in planes  $P1$  and  $P2$ .*

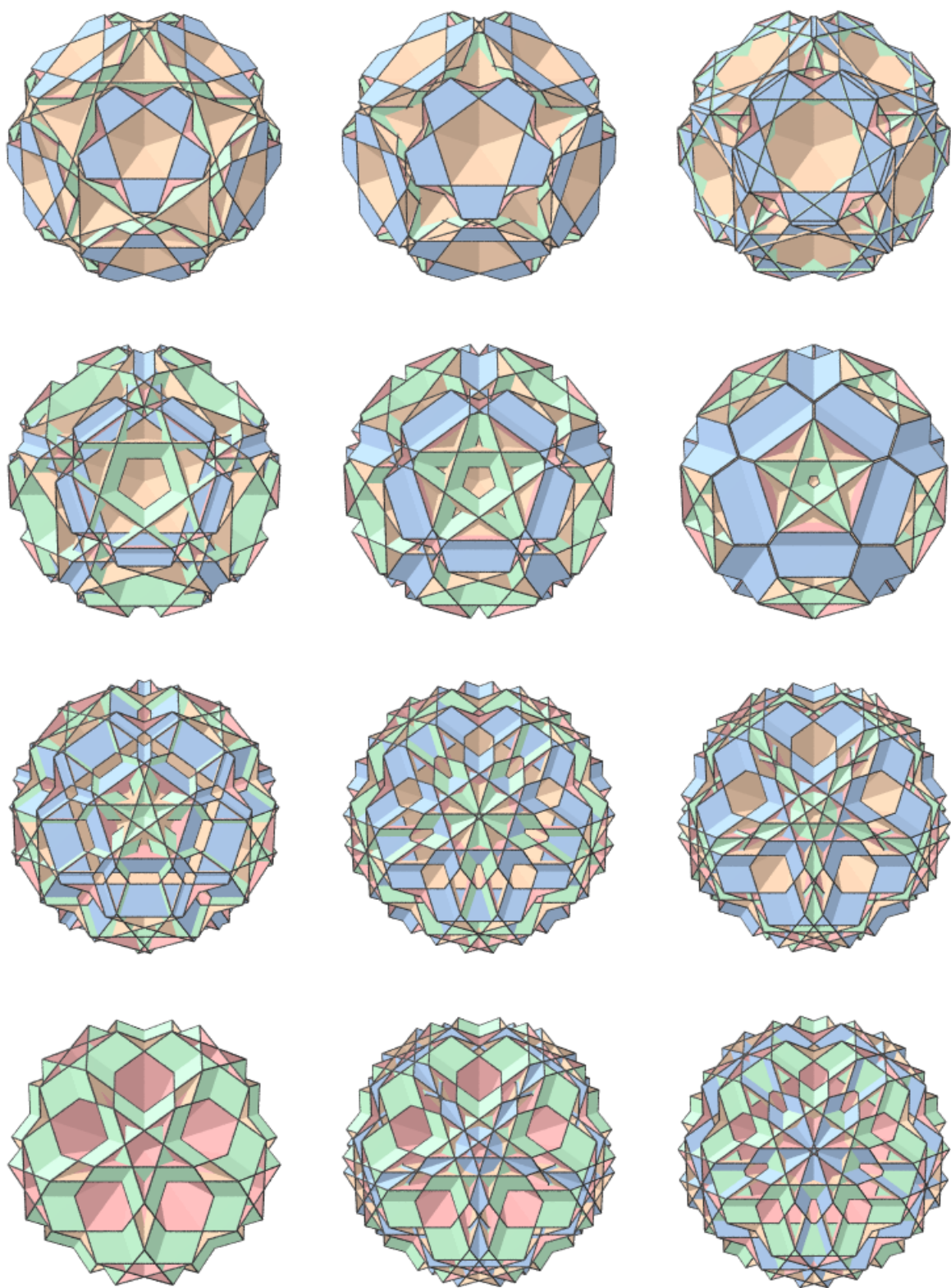


*Fig.7b Metamorphosis of a kaleidoscopic hexagon formed by reflections in planes  $P1$  and  $P4$ .*





*Fig.8 Metamorphosis of a kaleidoscopic polyhedron.*



*Fig.8 Metamorphosis of kaleidoscopic polyhedron (continued).*