Consider arrangements of n lines in the plane.

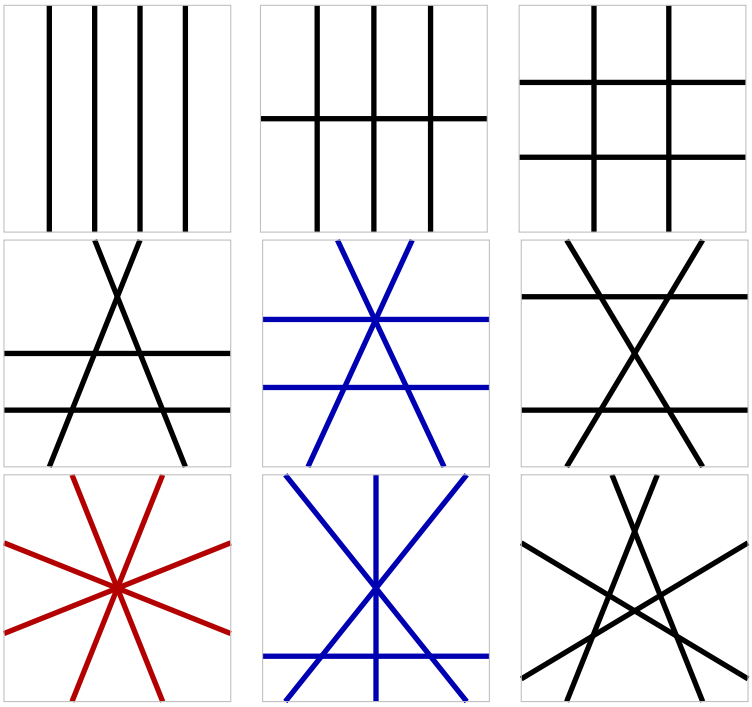

Figure 1: There are $A241600(4) = 9$ arrangements of 4 lines in the plane, which split the plane into $5, 8, 9, 10, 9, 10, 8, 10$, and 11 parts respectively.

Question. How many nonisomorphic ways can n lines split the plane into k parts?

Related.

1. What if only two lines can go through a single point?
2. What if circles are used instead of lines? Circles on a sphere? Lines on a torus?
3. Hyperplanes in higher dimensional space?
4. How many arrangements are there if the bounded regions must have equal area?
5. How many different polygons can be embedded such that every side is on a line? Convex polygons?

References.

OEIS sequences A241600, A177862, and A250001.