Self-inscribable and resolvable configurations

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A balanced geometric configuration $\mathcal{C}$ is called *self-inscribable* if there is a suitably rotated homothetic copy $\mathcal{C}'$ of $\mathcal{C}$ such that the points of $\mathcal{C}'$ are incident to the lines of $\mathcal{C}$. When $\mathcal{C}'$ is positioned so, we say that it is *inscribed* in $\mathcal{C}$. Using cyclically inscribed copies of such configurations we construct interesting sporadic examples and infinite families of new configurations.

Some of them have the combinatorial property of being *resolvable*. This means that the set of lines of such a configuration can be partitioned into classes such that within each class, the lines partition the set of points of the configuration by incidence. We also present some infinite families of resolvable configurations obtained by the above-mentioned constructions.

References

[1] G. Gévay, Resolvable configurations, *Discrete Appl. Math.*, **266** (2019), 319–330.