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Non-Fano Quads in Finite Projective Planes
Given a finite projective plane of order $n$. A quadrangle consists of four points $A, B, C, D$, no three collinear. If the diagonal points are non-collinear, the quadrangle is called a non-Fano quad. A general theorem is proved on the distibution of points and lines in a plane of order $n$, with respect to a non-Fano quad, whenever $n \geq 7$. The theorem implies that the number of possible distributions of points in a plane of order $n$ is limited for all $n \geq 7$.

