The Geometry of Complex Numbers

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The basic idea is to describe how one could go about coordinatizing the plane, introducing complex numbers as a natural means toward this end. To enrich these notions, I'd like to show how one could write down formulas for describing simple geometric objects like lines, curves, circles, and polygons in the plane using complex numbers. Moreover, I would like to describe the determinant in terms of a geometric construction, and, if there is time, to describe real linear transformations of $\mathbb{R}^2$ as well as how they can be "stitched" together to obtain smooth vector fields. The emphasis throughout the talk will be on using geometric visualizations to clarify why certain definitions are chosen.

Date: Wednesday September 18
Time: 7:00 pm
Place: Park 328