

1014-01-1000      **Alan Durfee\*** ([adurfee@mtholyoke.edu](mailto:adurfee@mtholyoke.edu)), Department of Mathematics and Statistics, South Hadley, MA 01075. *Kein's Erlangen program*. Preliminary report.

Klein began his lecture as follows: "Among the advances of the last fifty years in the field of geometry, the development of projective geometry occupies the first place. Although it seemed at first as if the so-called metrical relations were not accessible to this treatment, as they do not remain unchanged by projection, we have nevertheless learned recently to regard them also from the projective point of view, so that the projective method now embraces the whole of geometry."

He defines a geometry by choosing a conic in the projective plane. The points of the geometry are the interior points; distance and angle are defined using the logarithm of the cross ratio. Euclidean, non-Euclidean, and elliptic geometries as well as others can all be described in this manner.

I will sketch these developments. (Received September 26, 2005)