

# Applications of Clifford Algebra to Euclidean and Projective Geometry

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Isometries such as rotations or axial symmetries are written as products of elements of Clifford algebra. This provides a purely algebraic way to prove theorems of synthetic geometry such as Fermat's or Morley theorem, and to state algebraic formulas for geometric elements such as the Euler line. With Grassman's exterior algebra, linear manifolds can be written as products of points belonging to them. Expressing points, lines and planes in projective barycentric coordinates also allows us to easily prove projective theorems.