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In this talk, we place the development of vector algebra and vector calculus within its historical context, with a view toward the ongoing (re-)emergence of geometric algebra and geometric calculus, a system that could become the standard mathematics of the future for multiple dimensions. While the algebra of geometric algebra (a Clifford algebra) is well-studied, the same cannot be said for its ease of application or its geometry. We highlight a simple way to understand the algebra (and geometry) of geometric algebra (without knowing *any* high-powered mathematics). Our Grassmann hypercomplex number system defines a product for multi-dimensional numbers, and is seen to be a simple extension of well-known number systems (the reals, complex numbers, and quaternions, e.g.) that includes and surpasses our current vector algebra system—*simply unreal* ! (Received September 22, 2009)