

An Elementary Construction of the Clifford Algebra \mathbb{G}^n , and its Application to Star Graphs.

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The Clifford Algebra \mathbb{G}^n is a useful structure for studying graphs. In a previous talk we constructed the elements of \mathbb{G}^3 by defining a geometric product on ordered 8-tuples. We will now generalize this approach by using enumeration and counting methods to construct *any* Clifford Algebra \mathbb{G}^n by similarly defining a geometric product on ordered 2^n -tuples. We will use this representation to establish a basis of monomials on \mathbb{G}^n by multiplying the embedded elements mapped from an orthonormal basis on \mathbb{R}^n . We will conclude this talk by associating this basis on \mathbb{G}^n with a star graph on n vertices.

Keywords : Clifford Algebra, star graph, geometric product.