Quaternion Aphorisms

1. **A quaternion is the ratio of two vectors**

2. **A quaternion is the sum of a scalar and a vector**

3. **A quaternion transforms vectors in a plane, the plane of the quaternion**

4. **A vector is the ratio of two mutually orthogonal vectors that are also perpendicular to the vector. The vectors of the ratio define a plane that is perpendicular to their ratio.**

4'. **There is an equivalence between a vector and its plane.**

5. **The inverse of a vector has the opposite direction**

6. **The product of a vector and its inverse is the multiplicative identity, 1.0.**

7. **The inverse of a quaternion reverses its action. It is the inverse of the ratio of the vectors that defines it. It is expressed as the quaternion with a tensor of $1/T^2$, where T is the tensor of the original quaternion, and the vector is the negative of the vector of the original quaternion.**

8. **A conical rotation operator transforms vectors on a cone.**

9. **The ratio of two frames of reference is a conical rotation operator.**

10. **The ratio of two planes is their intersection.**