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Geometry of cubic polynomials.

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Summary: Imagine a sphere with its equator inscribed in an equilateral triangle. This Saturn-like figure will help us understand from where Cardano's formula for finding the roots of a cubic polynomial $p(z)$ comes. It will also help us find a new proof of Marden's theorem, the surprising result that the roots of the derivative $p'(z)$ are the foci of the ellipse inscribed in and tangent to the midpoints of the triangle determined by the roots of the polynomial.

Classification: G75
Keywords: Marden's theorem; cubic polynomials; ellipses; Cardano's formula
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