A 23-gon construction via 5 and 11 angle section

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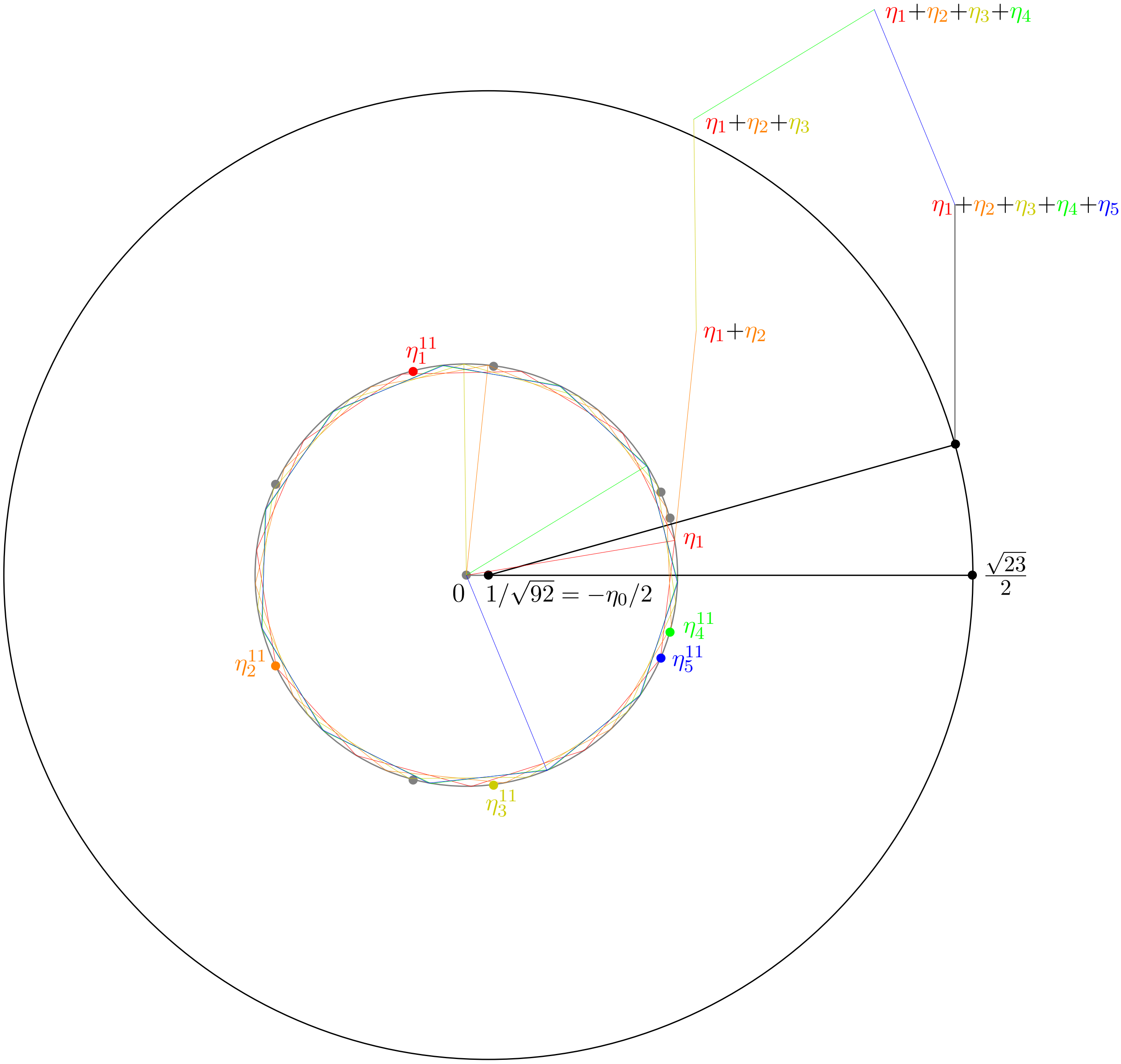
Let ξ denote a primitive 11-th root of unity. Its constructin via (no more than) fifth root extraction was explicitly shown here. Introduce the (complex) numbers $\eta_n^{11} := p(\xi^n)$, where $p(x) := \frac{4810728-18426793\,x+12996313\,x^2+15151367\,x^3+4283752\,x^4-4039948\,x^5+290906\,x^6-5853705\,x^7-2099438\,x^8-1781164\,x^9-5332019\,x^{10}}{23^{11/2}}$.

The construction of the icositrigon which we propose assumes that we have extracted the five 11-th roots η_1, η_2, η_3, η_4, η_5 which correspond to particular vertices of five (colored in red, orange, yellow, green and blue) hendecagons, inscribed in a unit circle.



Construct a circle centered at $1/\sqrt{92}$ (which would coincide with $-\eta_0/2$) with radius $11/\sqrt{23}$, and place a vertex on it at $\sqrt{23}/2$. Then the real part of the sum $\eta_1+\eta_2+\eta_3+\eta_4+\eta_5$ turns out to match the real part of a "next" vertex of a 23-gon thereby inscribed in the just-constructed circle.