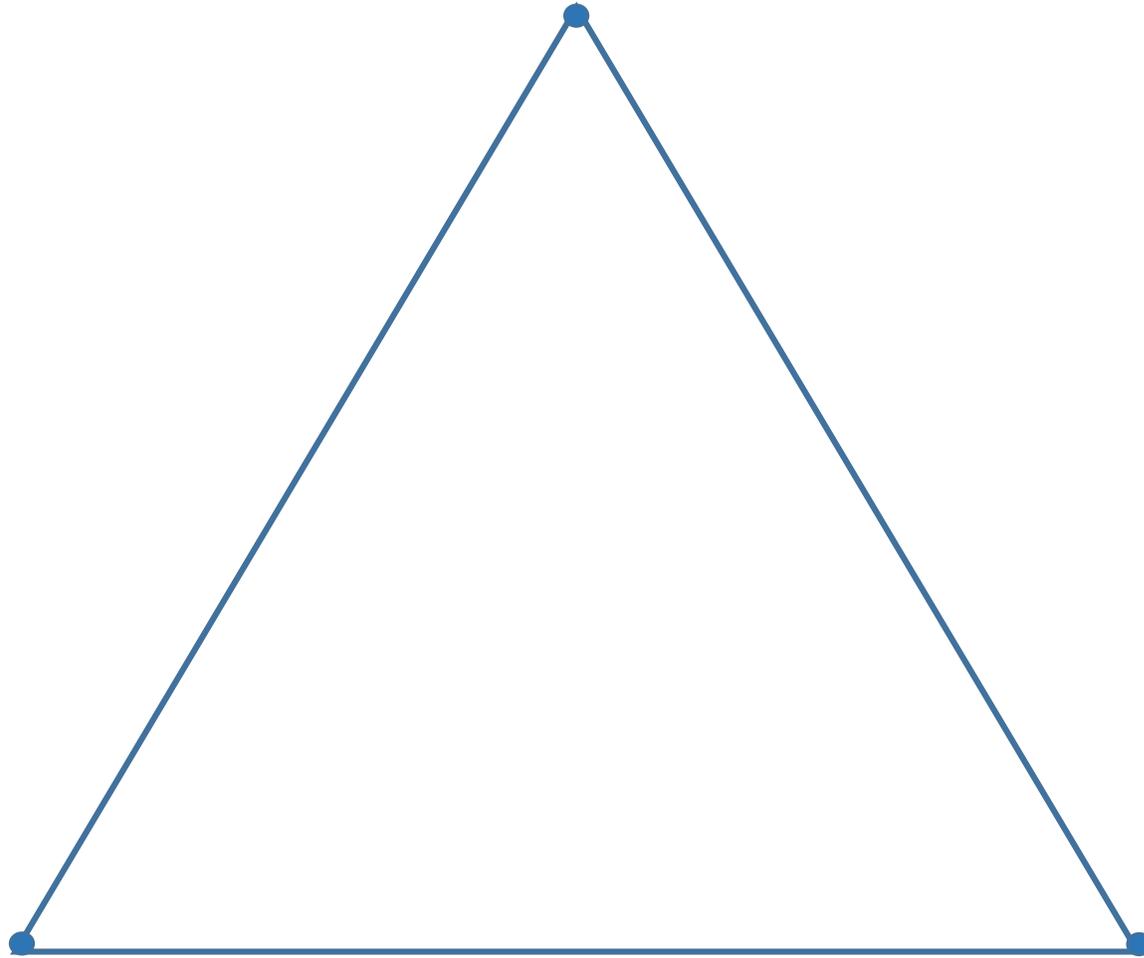
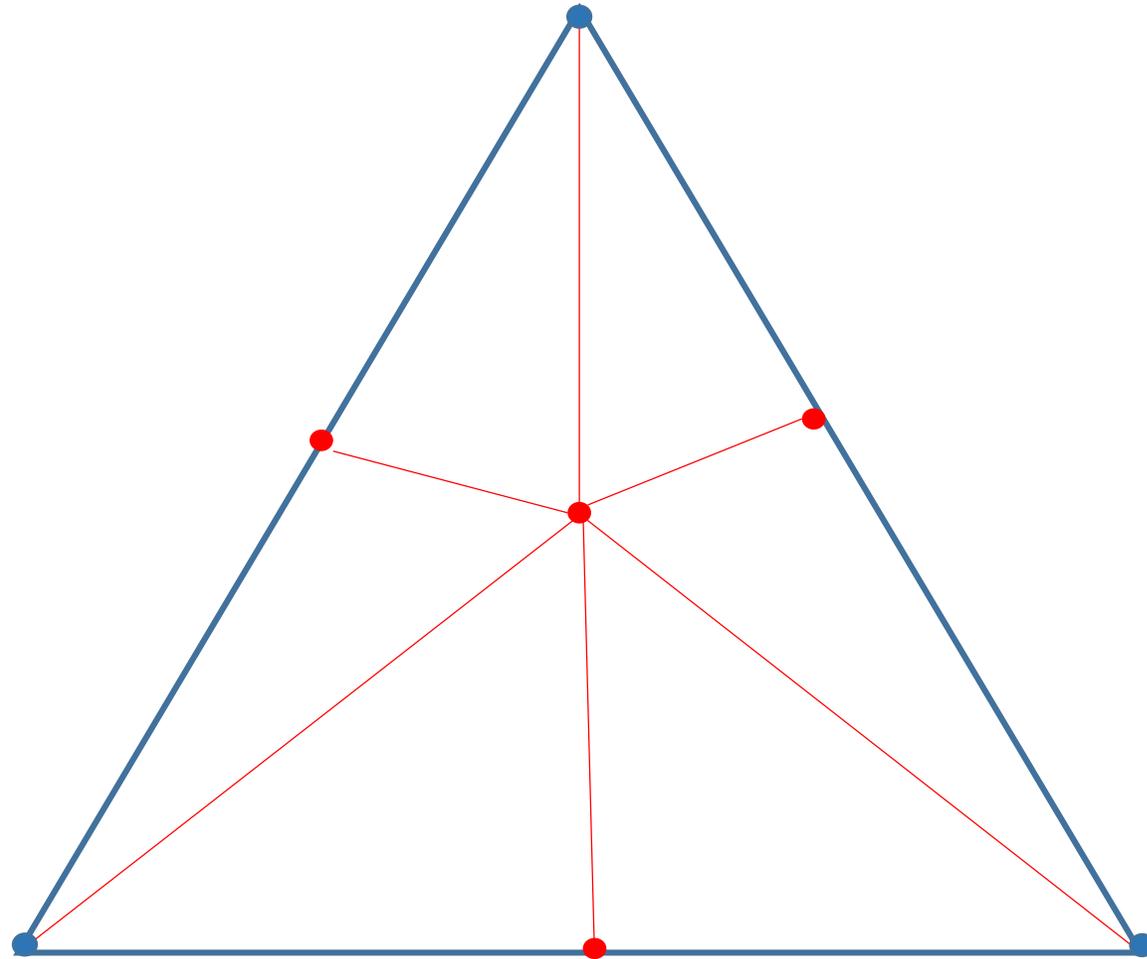


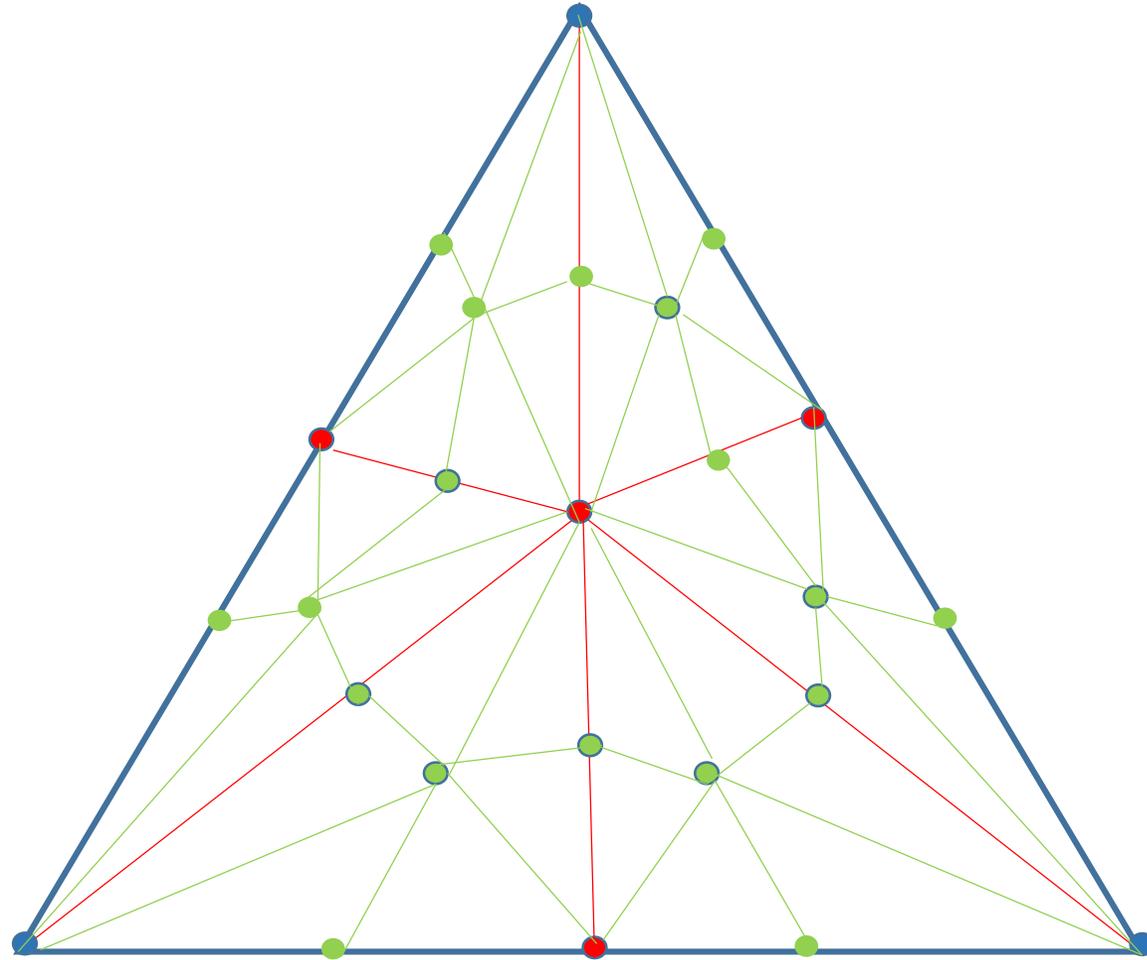
*I started with a triangle. 1 face, 3 vertices, 3 edges*



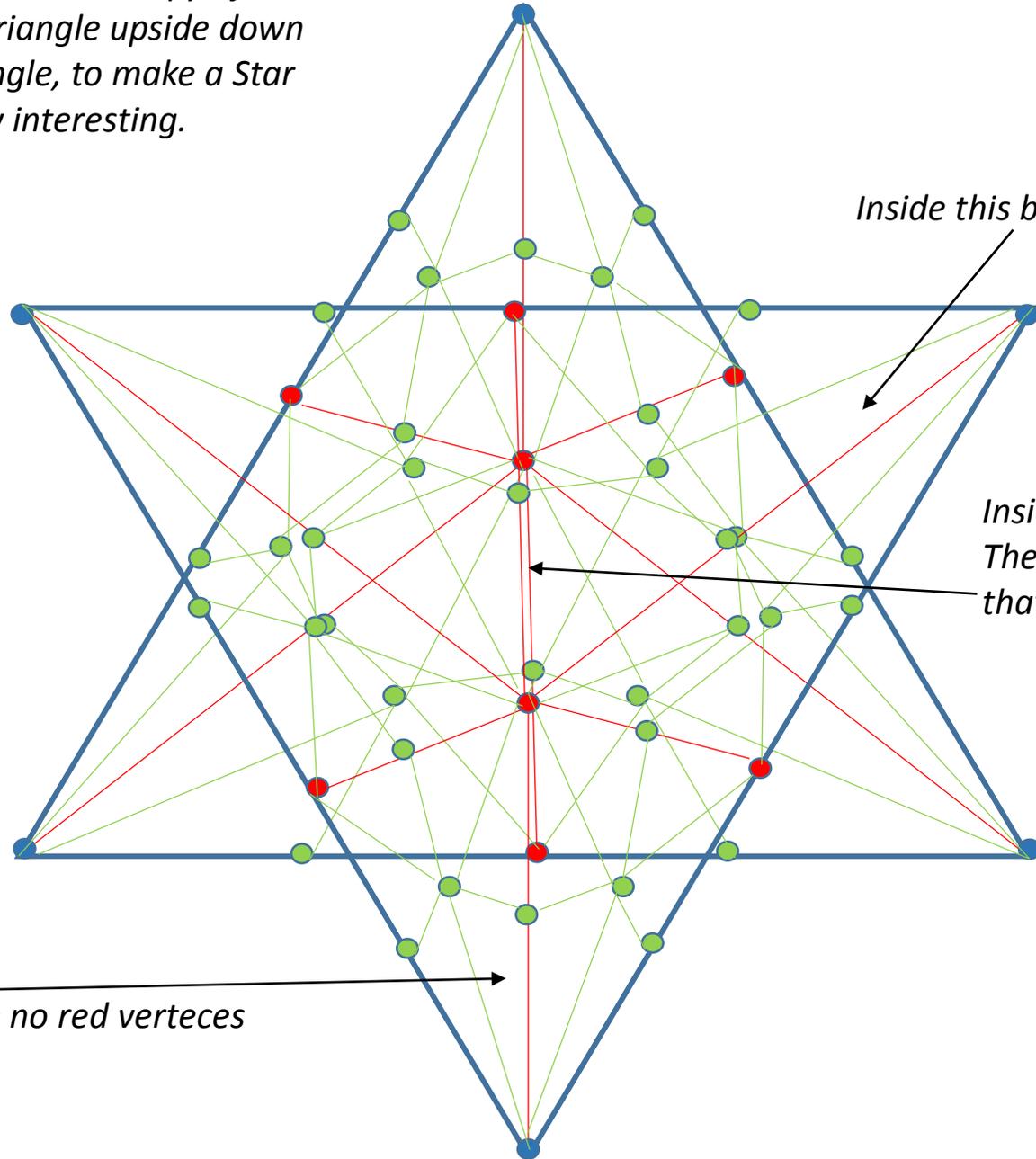
*Here is the first Barycentric subdivision*



*Here is the second Barycentric Subdivision.*



*In honor of the Jewish Holidays, I made a copy of the subdivided triangle, flipped the triangle upside down and placed it over the initial triangle, to make a Star of David. I found the result very interesting.*

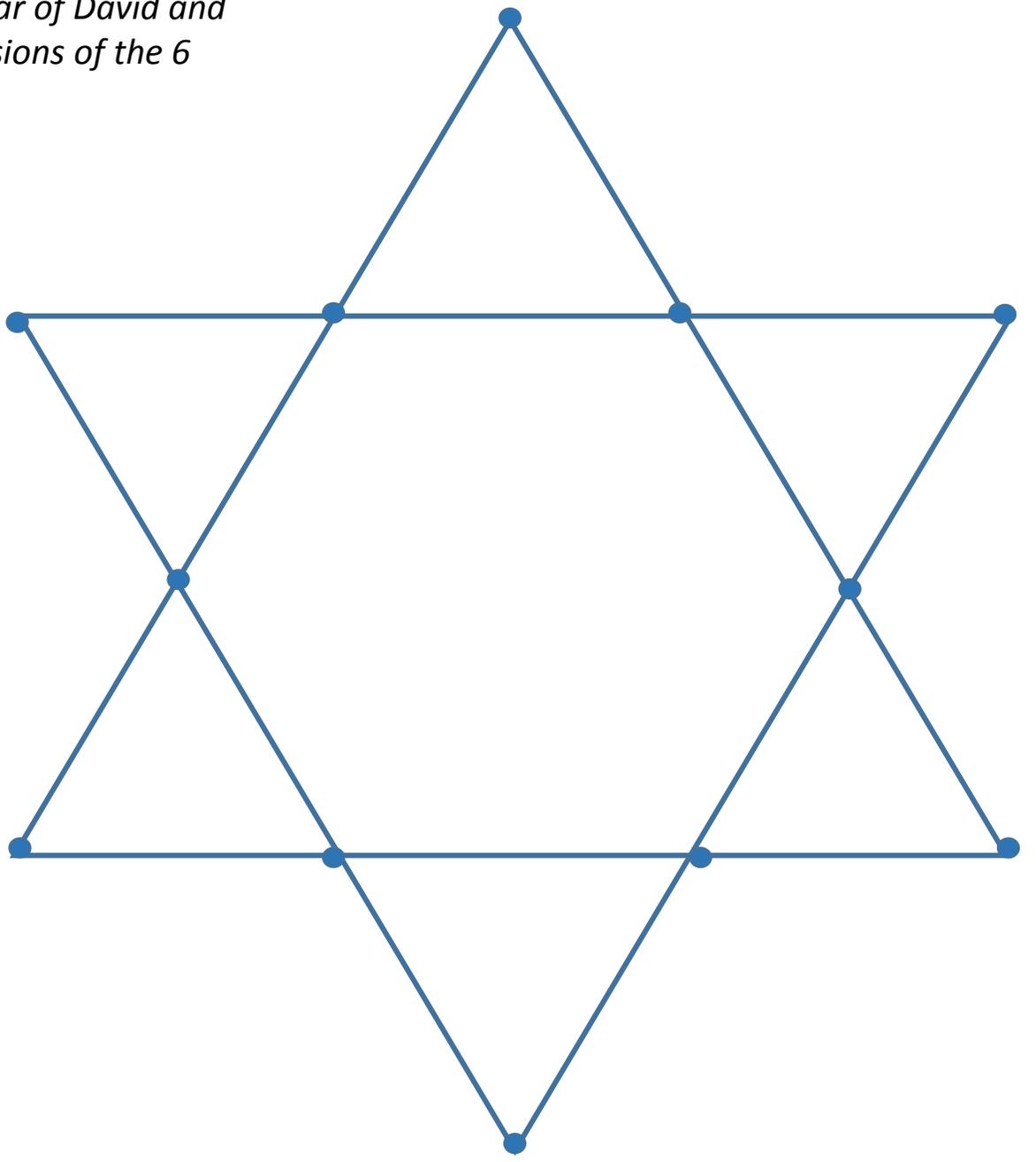


*Inside this blue triangle there are no vertices at all*

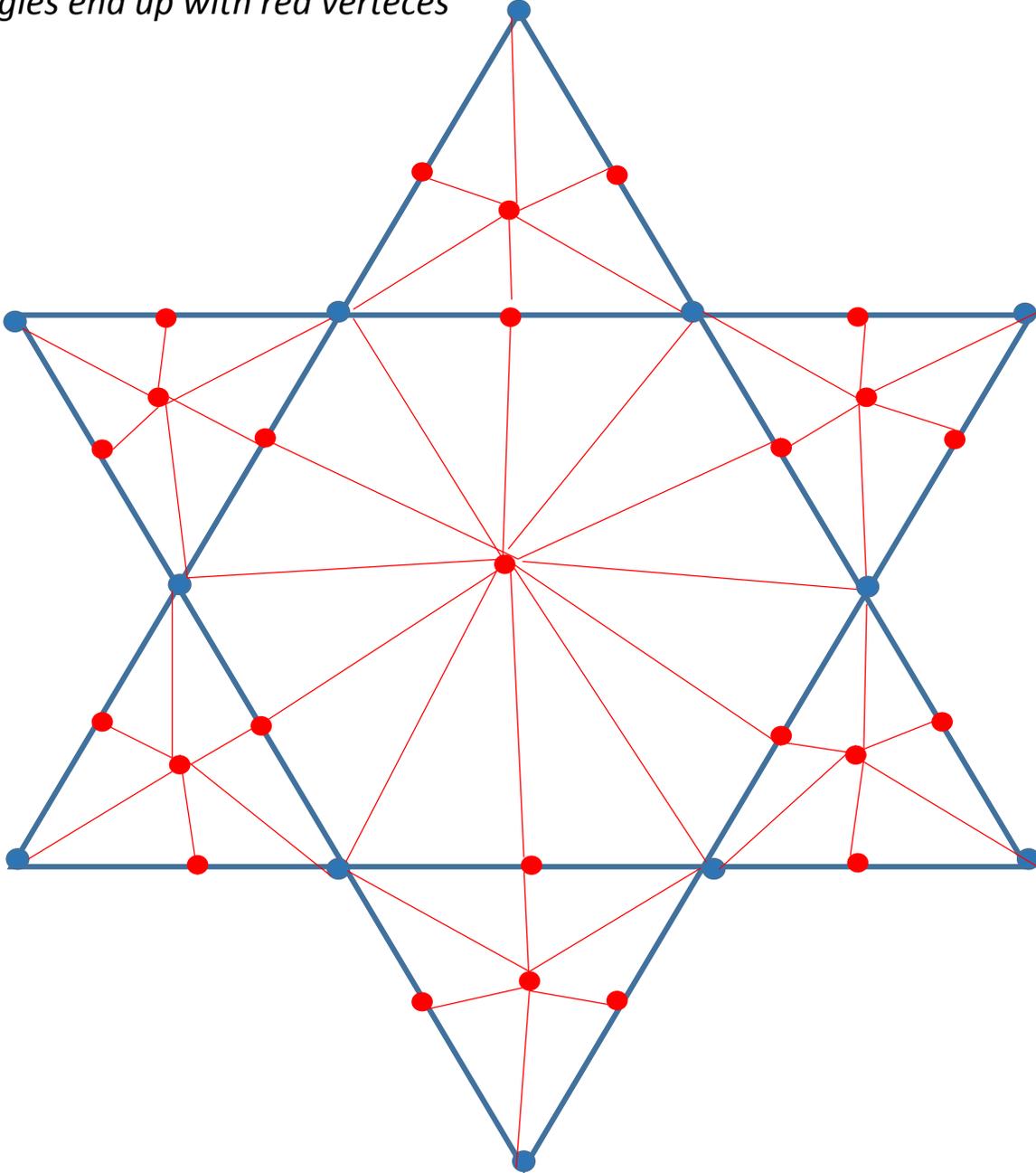
*Inside this blue hexagon are all the red vertices  
The faces include triangles but also other shapes  
that have 4 angles and 5 angles*

*Inside this blue triangle there are no red vertices*

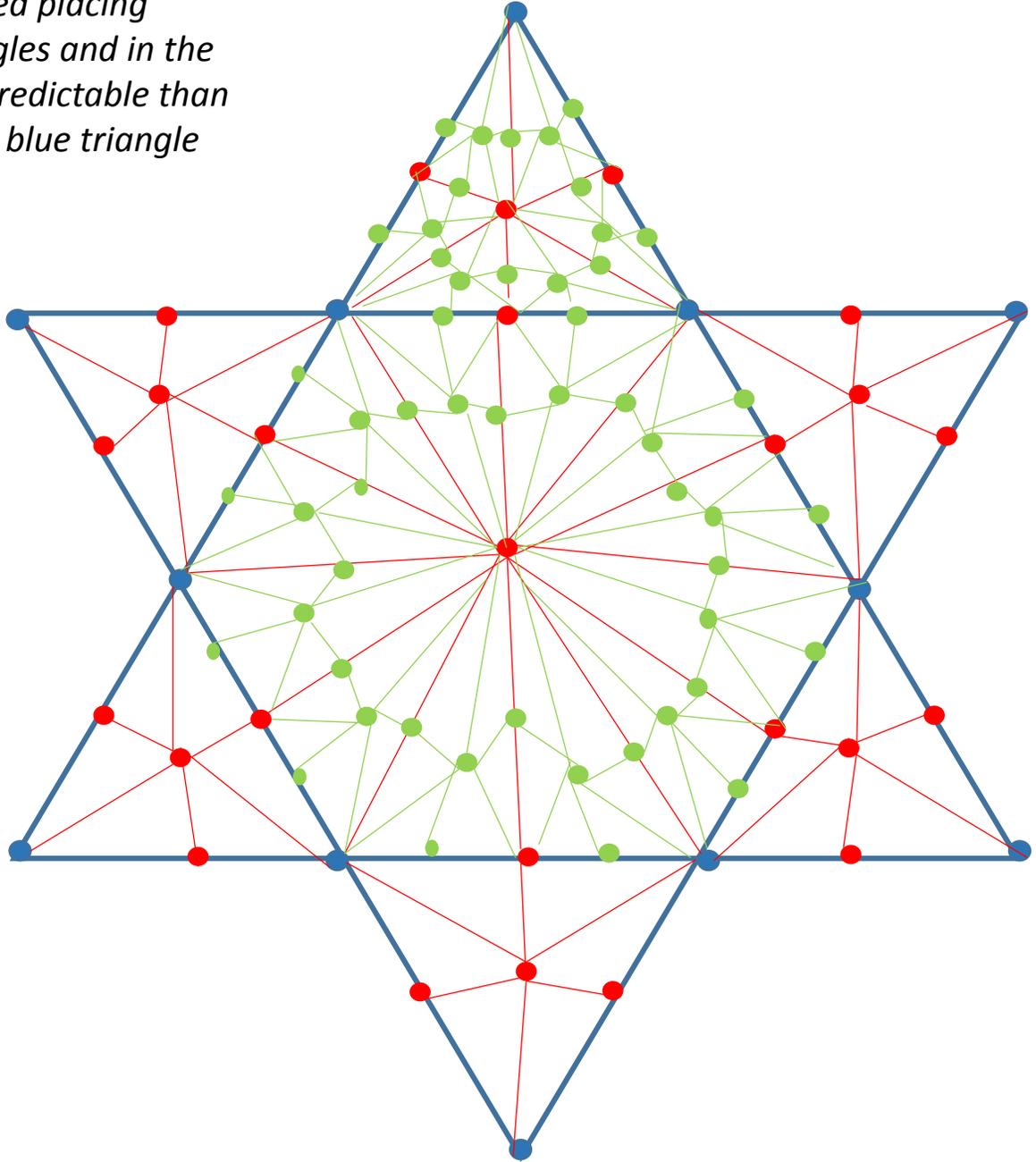
*This time I started out with the Star of David and started doing Barycentric Subdivisions of the 6 triangles and the 1 hexagon.*



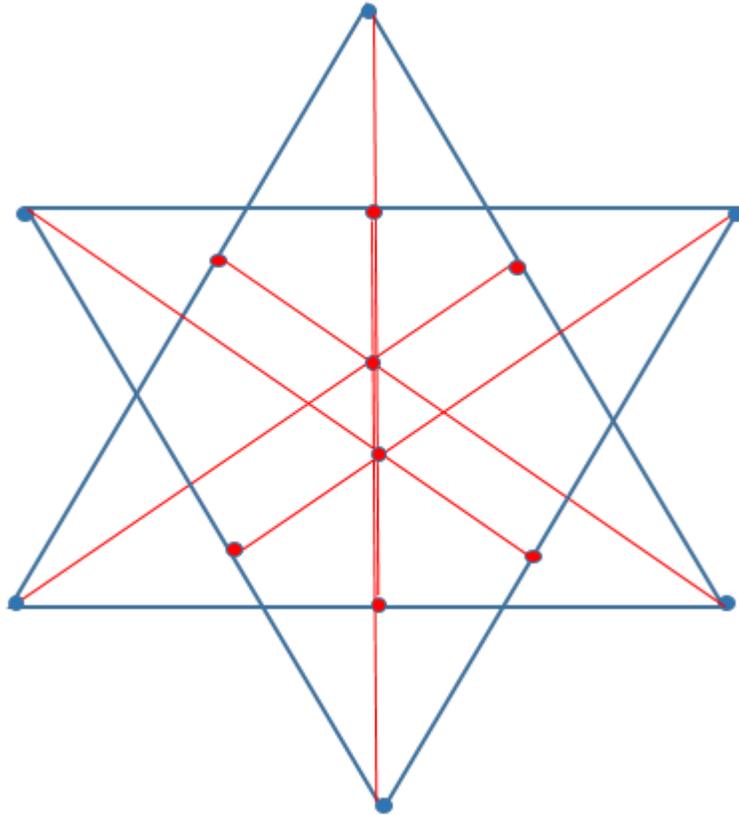
*By using this approach, all 6 triangles end up with red vertexes*



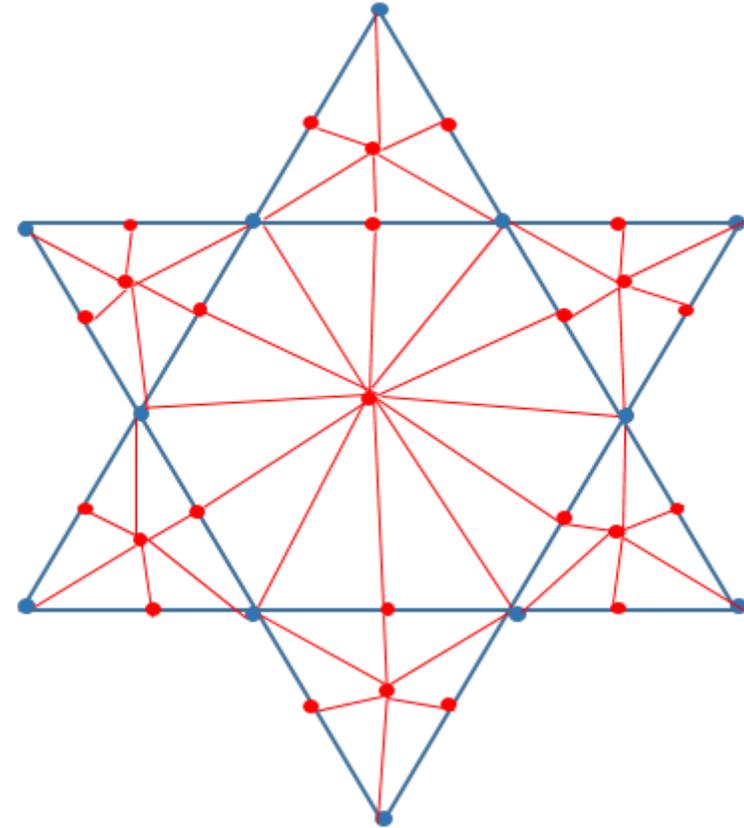
*And in the next subdivision I started placing green vertices in one of the triangles and in the hexagon. The result looks more predictable than when I started out with the single blue triangle and flipped it.*



*Here is a side by side comparison of the 1<sup>st</sup> order subdivision using each approach*



*The left hand side shows what happens if you subdivide a triangle and make a copy of it, invert it and place on top*



*The right hand side shows what happens if you subdivide the 6 triangles and the hexagon*