A symmetric flexible Connelly sphere with only nine vertices
by Klaus Steffen (I.H.E.S.)

1.) Make 14 rigid triangles and attach them to each other in a flexible fashion as indicated in fig. 1, 2 (two copies!); a good choice of parameters is e.g. \( a = 6 \), \( b = 5 \), \( c = 2.5 \), \( d = 5.5 \), \( e = 8.5 \).

2.) Connect (in a flexible way!) the two edges marked \( \odot \) in fig. 1 by rotating the corresponding triangles upward and the two edges marked \( \odot \) by rotating the corresponding triangles downward (in either copy!).

3.) Attach the two aggregates of 6 triangles to each other as indicated by \( \mathbf{3}, \mathbf{4} \) in fig. 3.

4.) Connect the two remaining single triangles (fig. 2) along edge \( e \) thereby making a "roof" which is attached to the configuration of 12 triangles from step 3.) as indicated by \( \odot, \odot, \odot, \odot \) in fig. 3.

5.) If you did not mess up everything the resulting sphere looks like fig. 4 and flexes by about 30° as indicated by the arrows. (It is a good idea to cut a "window" in the "roof" to make the inside visible.)