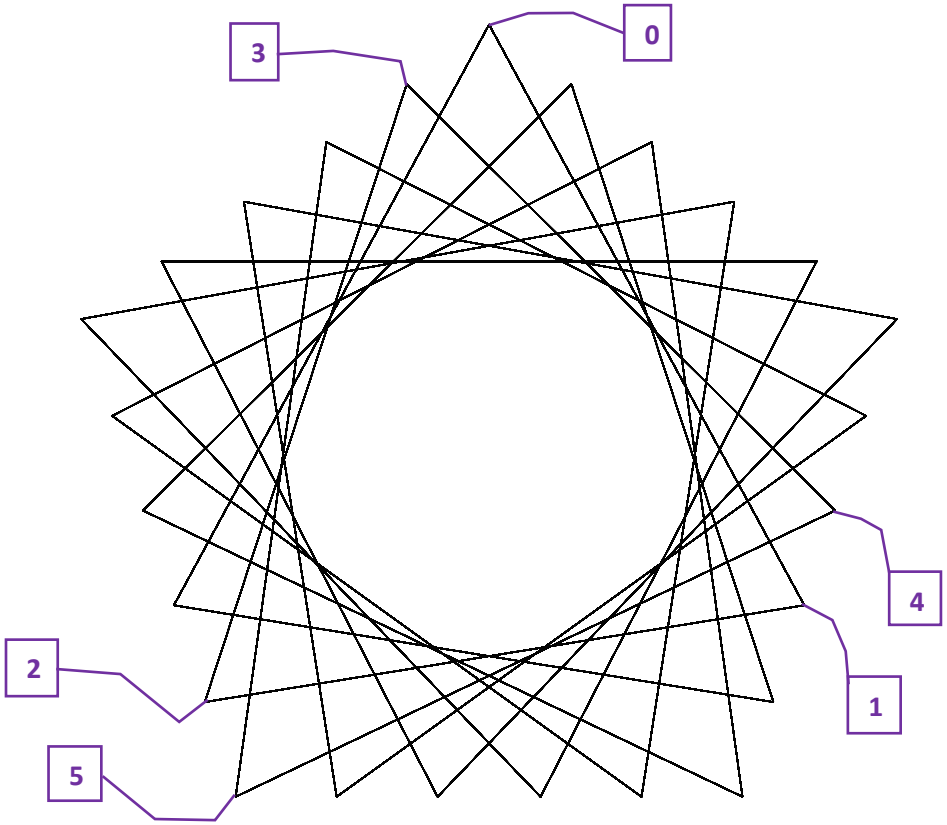
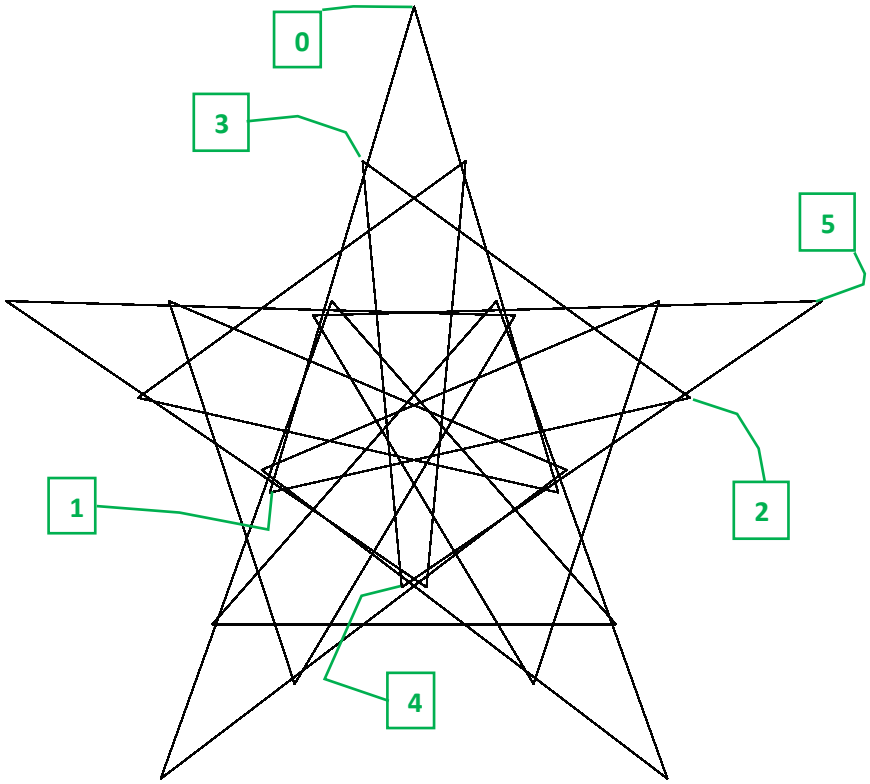
Role of *J* in *Shape-shifting Polygons*: Compare the first cycle from ***J* = 1** with ***J* = 2** for ***n*** = ***S*** = 5, ***P*** = (***n**S*** – 1)/3 = (25 – 1)/3 = 8.





The above images show the first ***S*** = 5 length cycle (from polygonal vertex to polygonal vertex) for two images, both of which are created with 25 lines (***n**S*** = 25). Both images have 5 cycles. All points in each first cycle are noted. Both images are *shape-shifting* triangles. The first cycle ends at vertex 3 on the left so that subsequent cycles end at pentagon vertices 1, 4, 2, with final cycle ending at 5&0. The right is a *clockwise-one-time-around image* (first cycle ends at vertex 1).

Both cycles have about "two triangles" since ***S*** = 5 = **2***3 – 1. As ***J*** increases (from left image to right image), the *shape-shifting* attribute becomes more acute. The best way to see this is to watch as lines are added to create each image. To see the image emerge, click *Toggle Drawing* after connecting to the link below:

The left image subdivision endpoints in the first cycle are successive points on three lines of the vertex frame. The points denoted **0**, **3** are on the fifth vertex frame line from vertex 4 to 5&0. Points denoted **1**, **4** are on the second vertex frame line from vertex 1 to 2. Points denoted **2**, **5** are on the fourth vertex frame line from vertex 3 to 4. https://www.playingwithpolygons.com?vertex=5&subdivisions=5&points=8&jumps=1

The right image subdivision endpoints in the first cycle are successive points on three lines of the vertex frame. The points denoted **0**, **3** are on the fifth vertex frame line from vertex 3 to 5&0. Points denoted **1**, **4** are on the second vertex frame line from vertex 2 to 4. Points denoted **2**, **5** are on the fourth vertex frame line from vertex 1 to 3. https://www.playingwithpolygons.com?vertex=11&subdivisions=7&points=26&jumps=5