Finding the Total Number of Connected Line Segments in an Image facing Multiple Jumps

When there are multiple jumps involved, it is no longer true that the maximum number of possible segments is simply ***n****S*. Now it is a multiple of that number.

In File 3, there are 3****n*** vertices in the vertex frame because moving to the next vertex requires 3 movements, the move to the next vertex, then the move to the center, then the move from the center back to that vertex. This file forces ***J*** = 1 so polygons result, but the vertex frame no longer looks like a polygon, but rather a polygonal pie plate with ***n*** equal-sized cut pieces. Since J = 1, VCF = 1.

The number of lines calculation replaces ***n*** with 3****n*** in the SCF calculation discussed in File 2.

On the subdivision common factor, *SCF*: On each of the 3****n*** line segments, we create ***S*** subdivisions. The total number of possible subdivision endpoints is thus ***S****3****n***. Not all of these endpoints are used if ***P*** has factors in common with ***S****3****n***.

Mathematically, the subdivision common factor, ***SCF***, is: ***SCF*** = **GCD**(***P***, ***S****3****n***).

The number of lines in the image, ***L***, is then given by: ***L*** = ***S****3****n***/***SCF***.