## A Slick way to Verify Symmetry of $\boldsymbol{J}$ and $\boldsymbol{n} \boldsymbol{- J}$ (using the numbered subdivisions file)

An early conclusion about String Art images is that the same static image occurs with $\boldsymbol{J}$ and $\boldsymbol{n}-\boldsymbol{J}$, the only difference is the direction in which the image is drawn. As a result, we typically focus on $\boldsymbol{J}<\boldsymbol{n} / 2$ with VCF $=1$. If $\boldsymbol{n}$ and $\boldsymbol{S}$ are odd and $\boldsymbol{P}=2$ the image is created in two "halves" the even subdivisions and the odd subdivisions. Each half has ( $n S-1$ )/2 segments and the final segment is the midway connection between subdivision $n S-1$ and 1. You can show the even half of the image by setting $\boldsymbol{J}<\boldsymbol{n} / 2$ with First $r$ lines clicked on in B10 $r$ in C12 set to the value given by $(\boldsymbol{n} \boldsymbol{S}-1) / 2$. (These restrictions ensure that SCF = 1 and provide all even vertices are connected in successive order.) To see the odd half, replace $J$ by $n-J$.

The first image is VF and numbered subdivisions. The $\mathbf{2}^{\text {nd }}$ highlights the even half and $\mathbf{3}^{\text {rd }}$ highlights the odd half.


1 line is missing from $\mathbf{2}^{\text {nd }}+3^{\text {rd }}$ (from $n S-1$ to 1 ). This trick works for other $n, S, P, J$ values: Set $r \leq \operatorname{INT}(\operatorname{Lines} / 2)=\operatorname{INT}(M 3 / 2)$.

