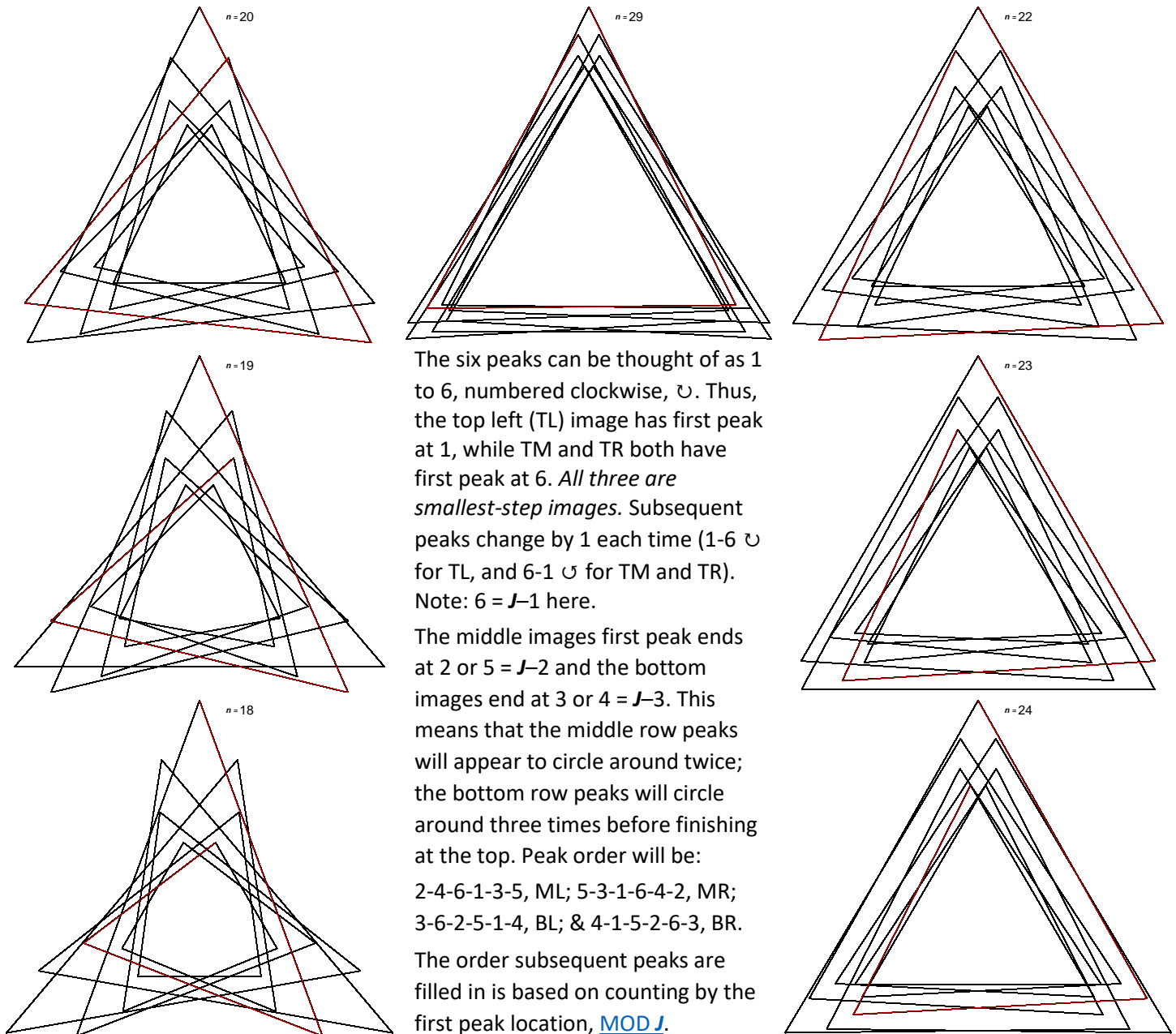


Smallest-Step Images (an example based on *Quivering Triangles* with $J = 7$ so $S = 21$)

All possible subdivisions are used in [single-step images](#) because $VCF = 1$ and $SCF = 1$ in these images. It is always possible to [simplify values](#) of n and J so that $VCF = 1$ but the same is not true for SCF . $SCF > 1$ is an essential part of some images, among them the $n = P$ class of images. When $SCF > 1$ we can distinguish a similar notion of “closest” to the single-step idea found when all subdivision endpoints were employed in the final image. The notion of closest must be adjusted in this instance because used subdivisions that are closest to the top will not be on the start or end of the VF as with single-step images. Instead, they will be on other portions of the VF such as the 6 peaks (other than the top) shown below.



The six peaks can be thought of as 1 to 6, numbered clockwise, \cup . Thus, the top left (TL) image has first peak at 1, while TM and TR both have first peak at 6. *All three are smallest-step images.* Subsequent peaks change by 1 each time (1-6 \cup for TL, and 6-1 \cup for TM and TR). Note: $6 = J-1$ here.

The middle images first peak ends at 2 or $5 = J-2$ and the bottom images end at 3 or $4 = J-3$. This means that the middle row peaks will appear to circle around twice; the bottom row peaks will circle around three times before finishing at the top. Peak order will be: 2-4-6-1-3-5, ML; 5-3-1-6-4-2, MR; 3-6-2-5-1-4, BL; & 4-1-5-2-6-3, BR.

The order subsequent peaks are filled in is based on counting by the first peak location, [MOD J](#).

It is worth focusing attention on the TM image, $n = 29$. The band that the triangles quiver within is smaller than the TR $n = 22$ image but both rotate counterclockwise 1 peak at a time since both have remainder 1 upon division by $J = 7$.

Drawing help. For complex images, find the sub-image length place *Single Lines Overlaid Drawing* mode on *Pause*, adjust *Drawn Lines* until the last endpoint is close to the top (DL = 3 here). Then switch to *Fixed Count Drawing* mode and *Play*.

An exercise. Compare two $J = 20$, $S = 60$ quivering triangles. One has $n = P = 83$, the other has $n = P = 79$. Predict the pattern of peak fill in in each instance. How many times around are needed and what direction are the peaks filled in?

Answers: 17-14-11-8-5-2-19-16-13-10-7-4-1-18-15-12-9-6-3 and 1-20. One is $3 \times \cup$ the other is $1 \times \cup$.