## 9.5. Comparing Single-Step with Smallest-Step using *Three Shape-Shifting Triangles*

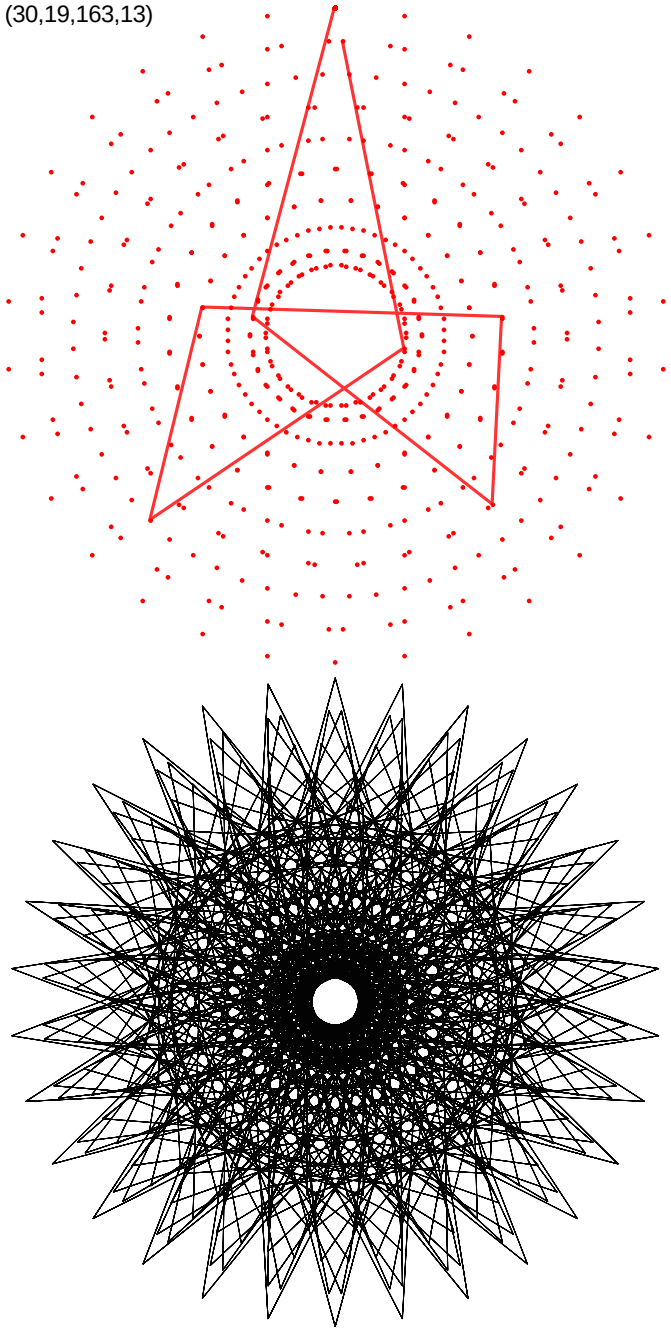
Both top row images show subdivision dots and the first 7 lines, and both look quite similar as both are versions of *Three Shape-Shifting Triangles* (3SST). The left, from Section 8.4, has 570 = 30·19 dots while the right has 380 = 20·19. All of the dots are used on the left, but only 1/10th of the dots are used on the right because SCF = 10.

**Steps.** The left 3SST image is ***single-step*** of length 7 (Section 8.5.1) meaning that the 7th endpoint lands on subdivision 1 (since 7·163 = 1141 = 2·570 + 1). The right 3SST image is ***smallest-step*** of length 7 (Section 9.4) because the 7th endpoint, at subdivision **210** = 7·30 is the closest endpoint to the top (**380&0**) that is also a multiple of 10 (since SCF = 10). The snapshot to the right (from *Excel* file 10.0.1) shows the subdivision endpoints "near" the top. The two possible candidates for smallest-step are **170** and **210** and the 7th endpoint is **170** if one of two parameters change: ***P*** = 350 = 380-30 or ***J*** = 9 = 20-11 (see Section 6.2).


**Cycles.** As noted in Section 8.6, the left is a 30-cycle, ↺ 11-times around image, with 81 steps. At right is a ↻ 2-cycle, 1-time around image of about 5 steps (5 is closest to 38 lines/7). Lines 10 and 29 are the isosceles triangles vertical bases.

(n, S, P, J)
(30,19,163,13)

570 lines



(n, S, P, J)
(20,19,30,11)

38 lines