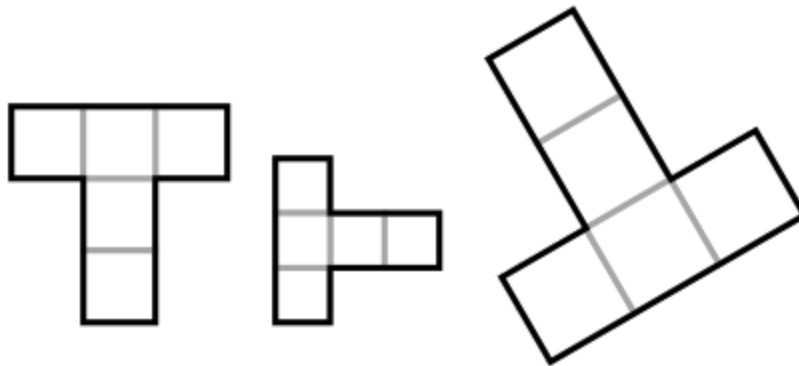


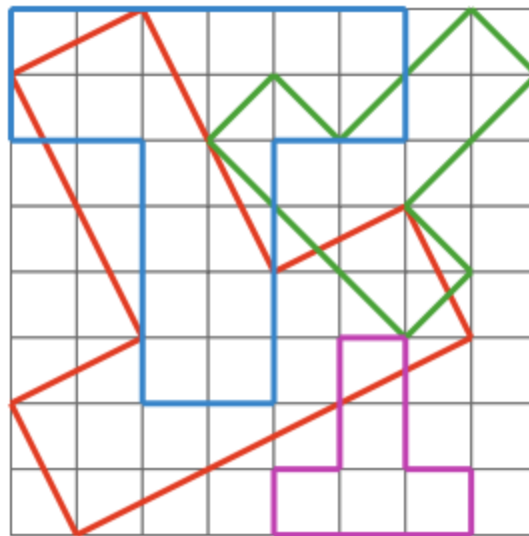
T-Shapes in a Lattice

(posted Friday 13 November 2020)

A T-shape is composed of 5 squares of equal size fused together along their edges, like this:



A T-shape has 8 vertices. In a square lattice, T-shapes may be constructed that lie with their 8 vertices on lattice points. In the 8 x 8 lattice shown below (8 squares by 8 squares, 9 lines by 9 lines), 4 of the possible 260 T-shapes that may be constructed are shown in different colors.



How many T-shapes may be constructed in a **12345 x 12345** lattice?

Goal to meet and beat: 289ms (Python under PyPy)