

## Mathematics 2260H – Euclidean Geometry

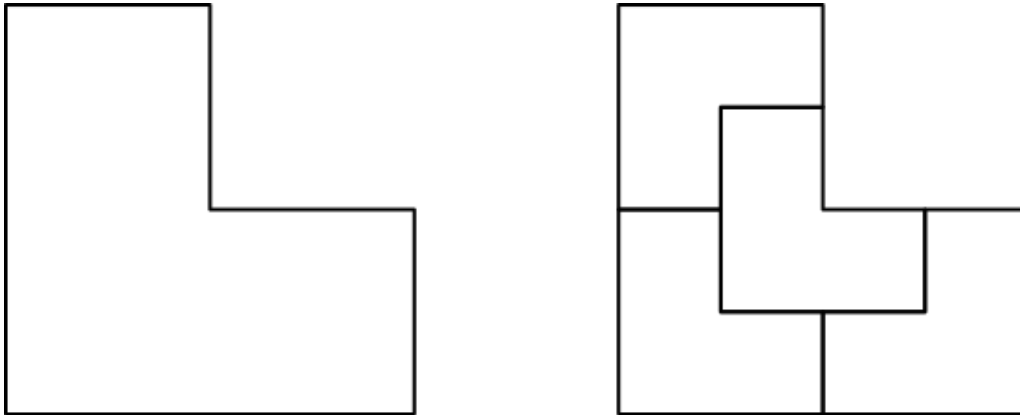
TRENT UNIVERSITY, Winter 2026

### Assignment #11

#### Reptiles

*Due on Thursday, 2 April.\**

A polygon is said to be a *reptile*, or *self-replicating tile*, if it can be dissected into pieces of equal size, each of which is a scaled-down version of the original polygon. For example, the “L” *tromino*, made up of three squares stuck together edge-to-edge, but not in a row, is a reptile, as demonstrated by the following dissection:



Note that you’re allowed to rotate, move, and flip the scaled-down polygons used in these dissections.

1. Find another dissection of the “L” tromino given above that demonstrates it is a reptile. [1]
2. Which regular polygons are reptiles? Explain why. [9]

I think that I shall never see  
A space as lovely as the tree.  
A tree, where cycles don’t occur,  
A path-connected graph, for sure.  
To single points it may retract—  
To **any** of its points, in fact.  
Each graph must have a group that’s free,  
But nothing’s simpler than a tree.

*Stephanie Wukovitz*

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\* Please submit your solutions, preferably as a single pdf, via Blackboard’s Assignments module. If that fails, please submit them to the instructor on paper or via email to [sbilaniuk@trentu.ca](mailto:sbilaniuk@trentu.ca) as soon as you can.