PROBLEM RESTATEMENT – Using ALL sets of n trees, place each tree together into a complete graph

DEFINITIONS –

Tree – a mathematical structure that can be viewed as either a graph or as a data structure

Complete graph – a graph in which each pair of vertices has an edge

QUESTIONS –

How many trees can be combined before it becomes too complex?

Do the sizes of the trees being combined matter when creating a complete graph?

Can shapes can be made?

Can trees form a vertex inside the shape they are creating?

At what sizes of trees does it become impossible to create a triangle?

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I’ll use this data structure for trees:

1 edged tree –

2 edged tree –

Creates this graph –

The goal is to create increasingly larger graphs with trees made of more edges

2 Edged –

3 Edged –

Creates this graph –

What about using two trees of the same size?

3 Edged –

3 Edged –

The more edges, the more complex the graph.

As the graphs get more complex, the amount of geometric options increase

My new goal is to build on this graph, increasing the size of the trees being used, labelled by color instead of visually showing the tree.

3 Edges -

4 Edges -

Adding another 2 edged tree would complete the triangle with all inner edges

2 Edges -

3 Edges -

4 Edges -

ATTEMPTING PENTAGON WITH 4 TREES

1 Edge -

2 Edges -

3 Edges -

4 Edges -

Creates this graph –

With all of this shown it would be hard to say that these graphs could get TOO complex, they would just become larger and larger with more geometric diversity.