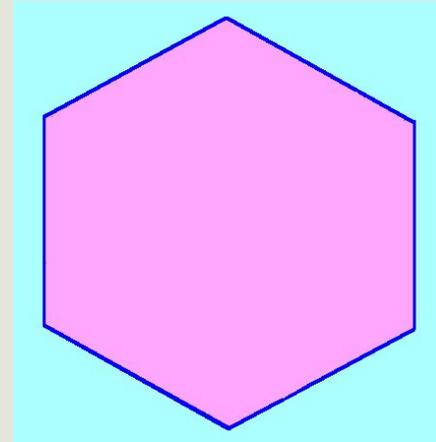
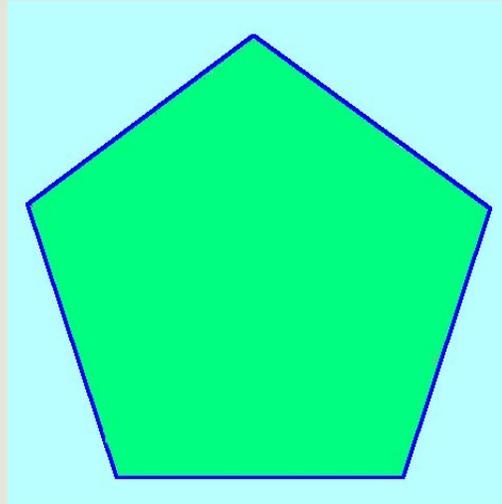
The background is a dark chalkboard with various mathematical sketches in light grey. On the left, there is a large drawing of a microscope. At the top left, there is a drawing of a telescope. In the top center, there is a drawing of a globe. At the bottom, there are several smaller sketches including a cross, a book, a percentage sign, and other geometric shapes.

Mathe-Magical Scissors

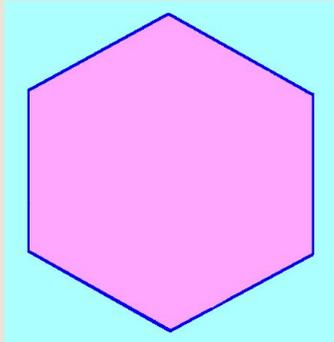
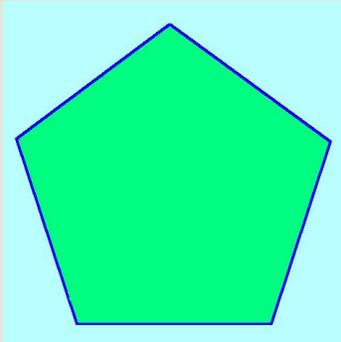
Polygons Equidecomposibility
By Harry Main-Luu

Challenge: Can I chop up the pentagon and glue it back into a hexagon?



Can I cut the green one into *finitely* many pieces then put it back to fit perfectly into the pink?

Challenge: Can I chop up the pentagon and glue it back into a hexagon?



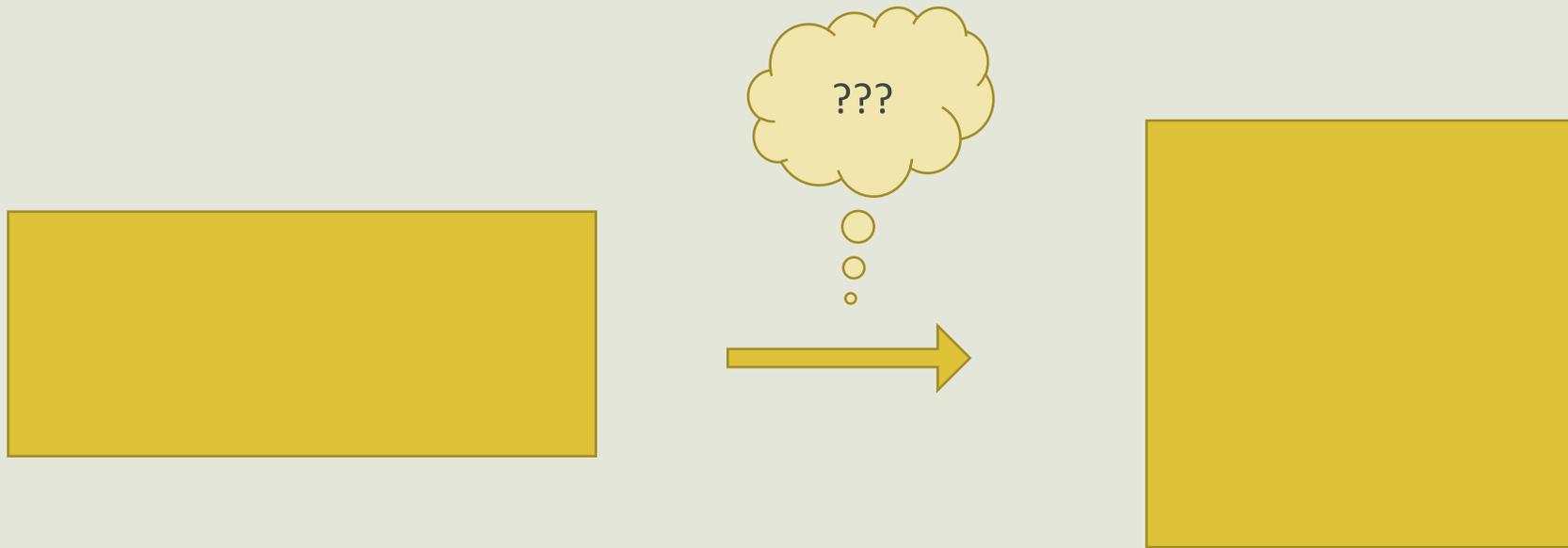
Can I cut the green one into *finitely* many pieces then put it back to fit perfectly into the pink?

If it were possible, what can we say about their area?

Fancy words alert: Is this a *necessary* or *sufficient* condition?

Hmm... Let's try an easier problem! My students LIKE easy...

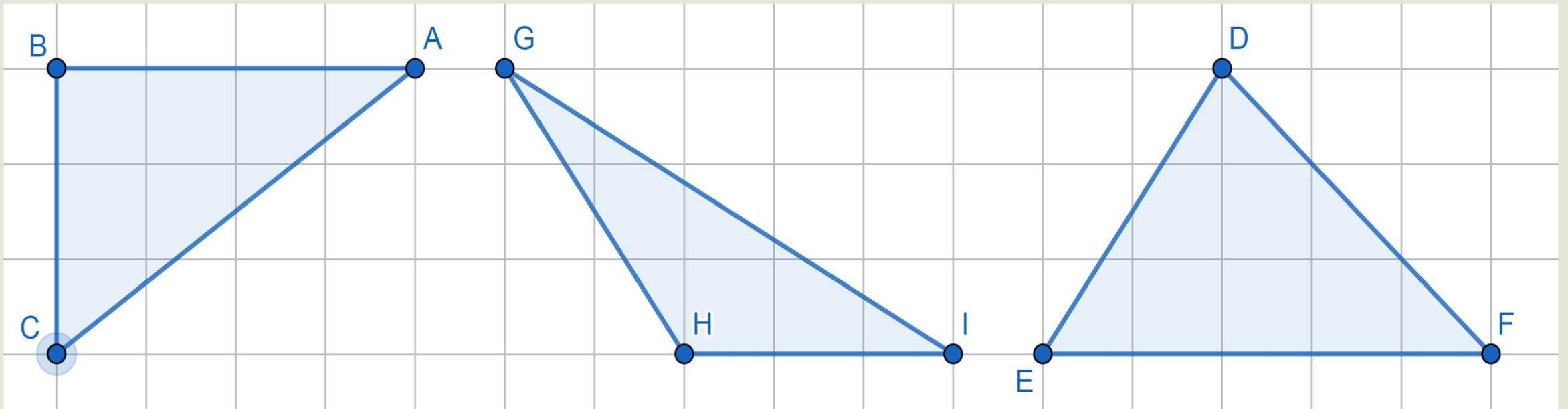
Let's try to cut things up and put them back in a square!



Open your handout and let's get to work!

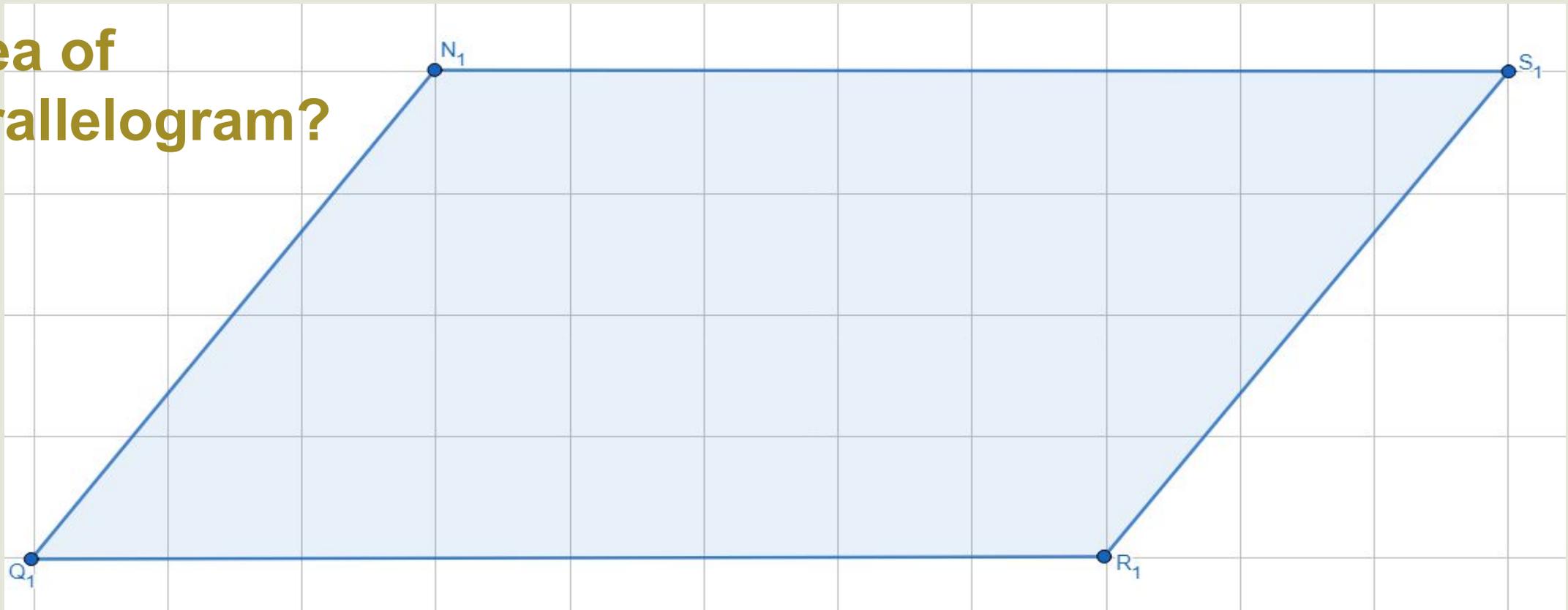
Q: What's the area of a triangle? WHY?

Area of triangles?



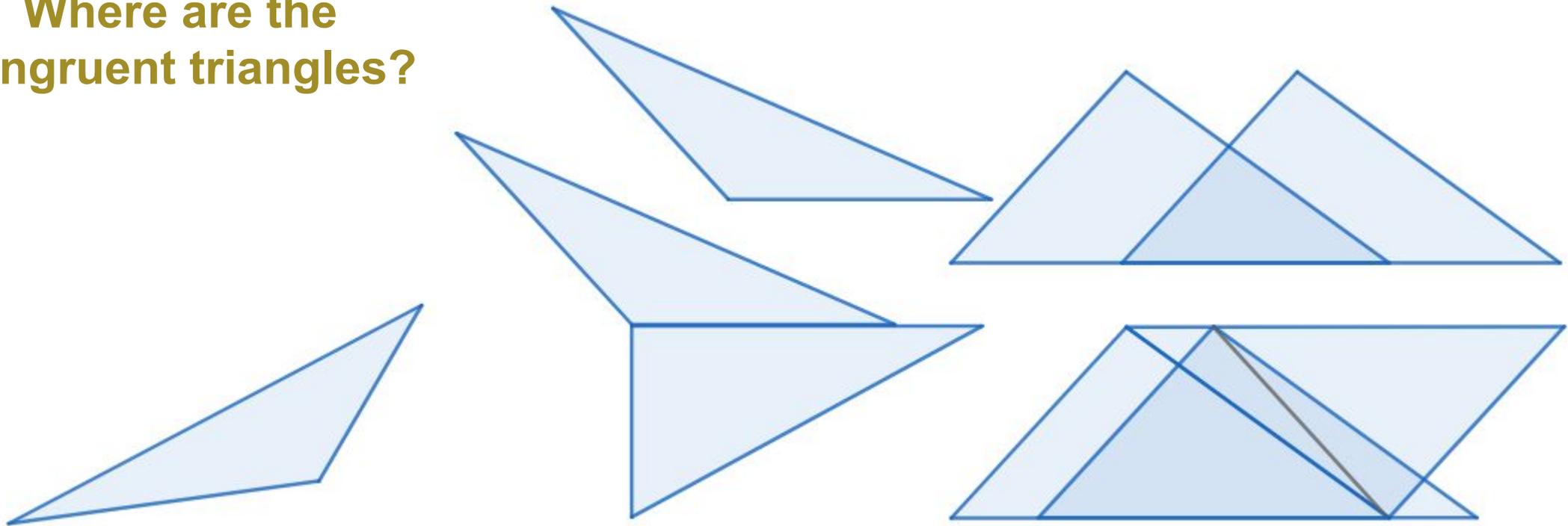
Q: What's the area of a parallelogram?

Area of
parallelogram?



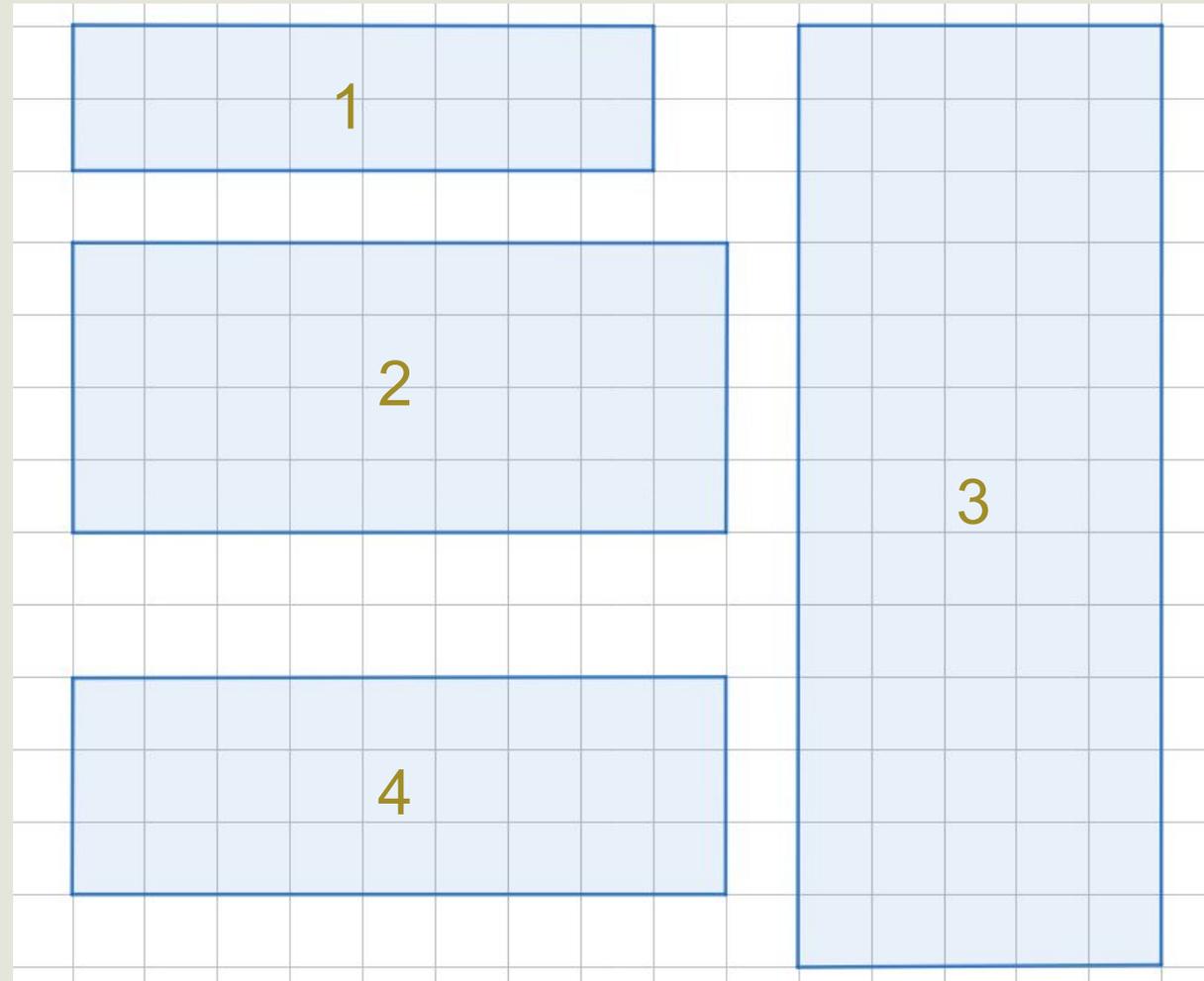
Find all congruent triangles

**Where are the
congruent triangles?**



Q: How to cut a rectangle into finitely many pieces and put it back in a square?

Let's try to cut these!



Okay... the last rectangle is difficult! Is it even possible?

