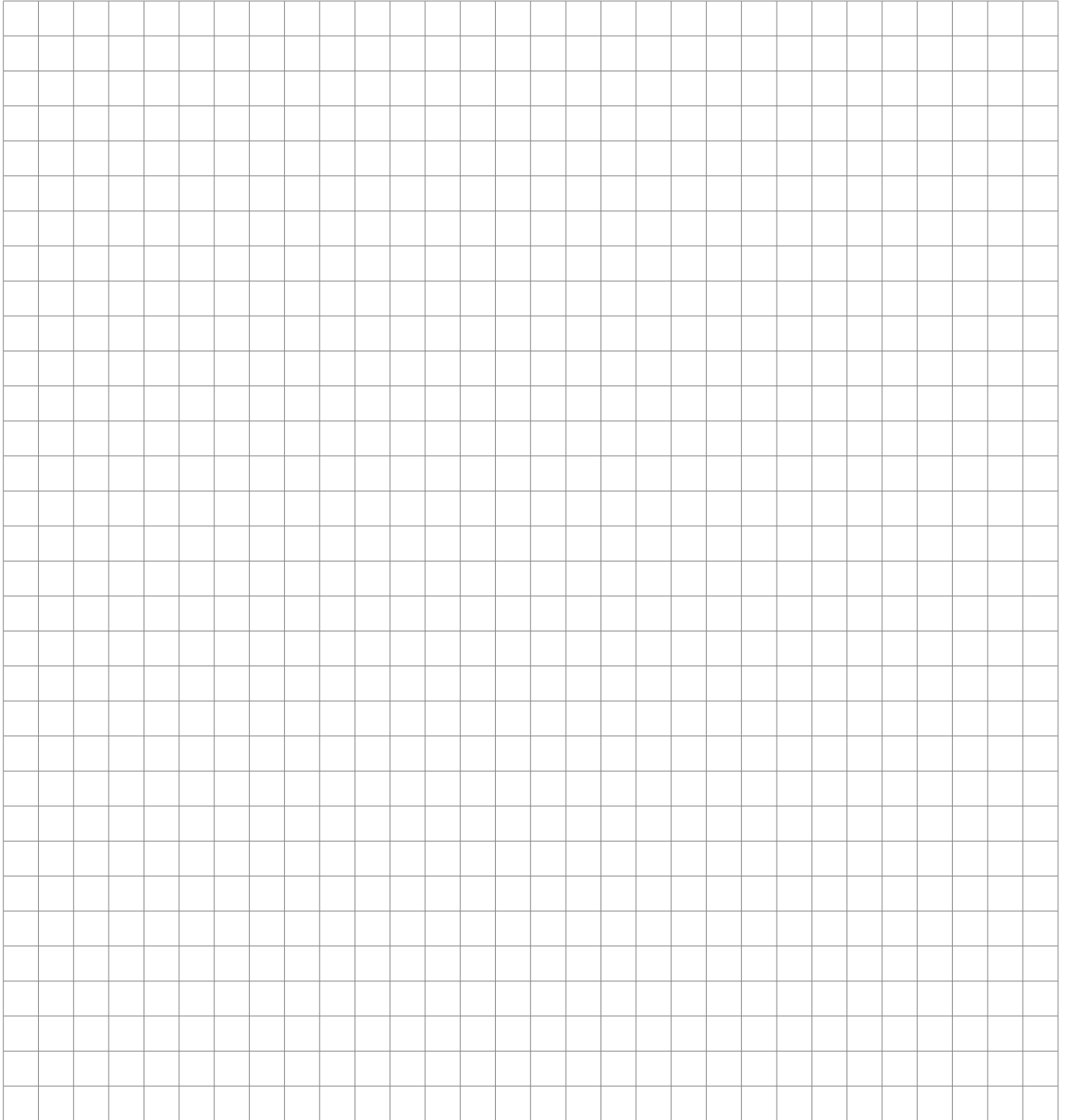


Name: \_\_\_\_\_



## One Hundred Squares

How many line segments do you need to draw to make 100 squares?



Name: \_\_\_\_\_



## **Simple Strips of Paper**

What shapes can be created using a strip of paper?



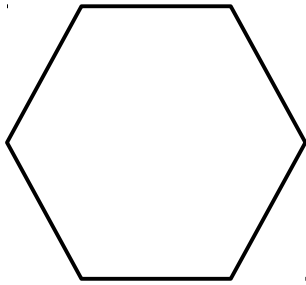


Name: \_\_\_\_\_

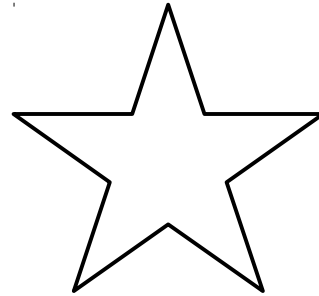
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## Folding and Cutting

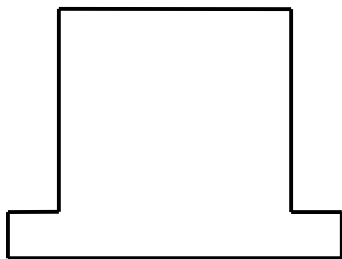
If you are only allowed to fold a paper flat and make a single straight cut, can you make any of these shapes?



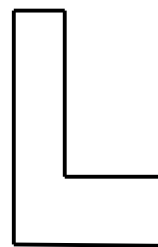
A hexagon



A five pointed star



A top Hat



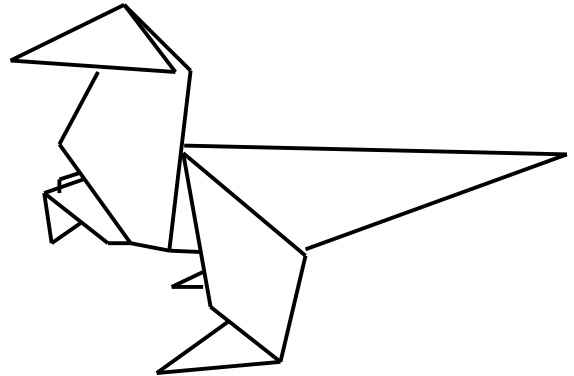
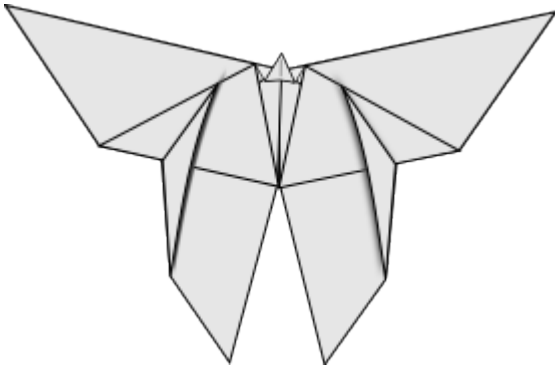
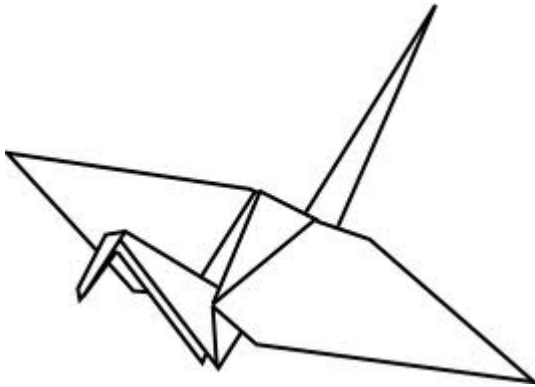
An "L"

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Name: \_\_\_\_\_

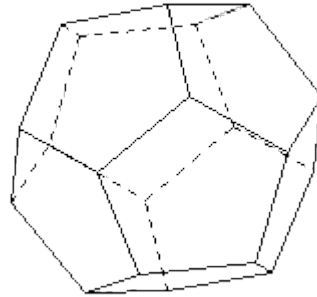
ORIGAMI

If you are only allowed to make folds, what shapes can you make out of a square piece of paper?



Name: \_\_\_\_\_

## Regular Convex Polyhedrons



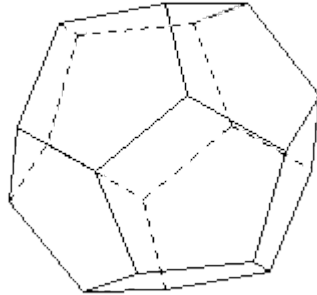
This shape is called a dodecahedron, which is a specific regular convex polyhedron (the same way a square is a specific regular polygon).

Build a Polyhedron Calendar.

Is it possible to build any other convex regular polyhedrons?

Name: \_\_\_\_\_

## Regular Convex Polyhedrons: Part II



**Definition:** A shape is said to be simple if it has no holes. (A sphere is simple and a donut is not simple.)

**What is the relationship between the number of faces, edges, and vertices in a simple polyhedron?**

**Definition:** A regular convex polyhedron is a 3-dimensional solid with very specific properties:

1. Every face is a regular polygon
2. Every face is congruent
3. Every edge only touches two faces
4. The same number of faces meet at each vertex
5. If you pick any two points on different faces of the solid, the line connecting those two points lives entirely inside the solid.

**How many regular convex polyhedrons actually exist?**

Name: \_\_\_\_\_



## **Making Booklets**



A booklet is made by folding a piece of paper a bunch of times, stapling across an edge to make a spine, then cutting to make separate pages.

Make a booklet by folding the paper in half, then in half again. BUT, number the pages before you bind the spine or cut the pages apart!!!

