

## Part 1: Four Points, Two Distances<sup>1</sup>

Consider four points in the plane, located at the corners of a square. How many distinct distances between pairs of points are there, in this arrangement?



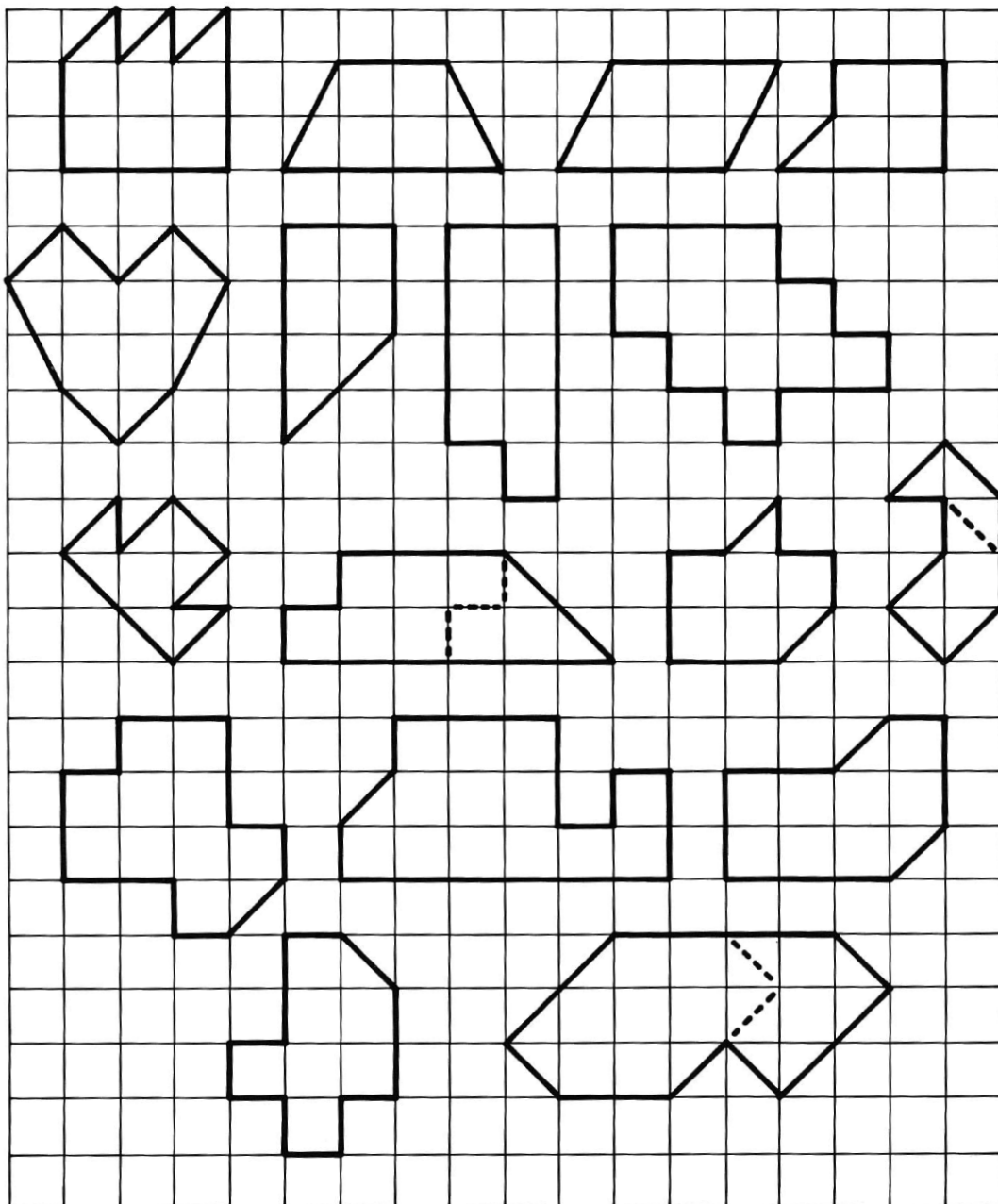
Apart from the corners of a square, can you find other ways of arranging four points in the plane, such that there are only two distinct distances between them? How many different arrangements can you find?

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<sup>1</sup>Thanks to Alon Amit for the Four Points Two Distances Problem. See <https://affineness.wordpress.com/2009/01/27/four-points-two-distances/>

## Part 2: Dissection Puzzles

By drawing lines, divide each of these shapes into three equal parts. Each part must be exactly the same size and shape as the other two. There may be multiple solutions!



Divide each of these shapes into two halves. Both halves must be the same size and shape. There may be multiple answers!

