

A Game of Catch

Abby, Bill, and Carol were playing catch. They stood at the imaginary corners of an imaginary triangle so that they all would have the same distance to throw the ball. Math is all in your head, and these kids were using theirs.

Darryl joined the group. They noticed that they could not find a formation on level ground which gave them all the same distance to throw. (I don't believe there is one.) The four settled on a square formation where there were only two distinct distances involved, one along the sides of the square, and the other between opposite corners (the diagonal distance). Incredible as it may seem, Carol, at home that evening, drew up five other formations that the four friends could have assumed, and still maintained only two different throwing distances. Can you sketch them?

Hint: Use the shapes of equilateral and isosceles triangles, a rhombus and a regular pentagon.

Solution

