

Further Challenges

If you are looking to further your learning, try one of these NRICH problem solving challenges.

These will not be marked via google classroom, but you are welcome to explore and complete these at home. 😊

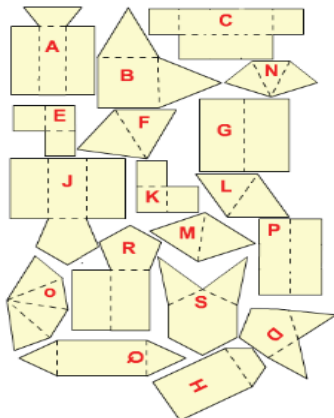
Cut Nets

Age 7 to 11 ★★

The net of a cube has been cut into two. It could be put together in several ways so that it could be folded into a cube.



Here are the nets of 9 solid shapes. Each one of these has been cut into 2 pieces, like the net of the cube.



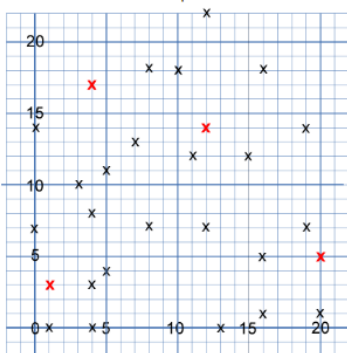
NRICH Cut Nets

<https://nrich.maths.org/2315>

Eight Hidden Squares

Age 7 to 14 ★★

On the graph below there are 28 marked points.



These points all mark the vertices (corners) of eight hidden squares. Each of the 4 red points is a vertex shared by two squares. The other 24 points are each a vertex of just one square. All of the squares share just one vertex with another square. All the squares are different sizes. There are no marked points on the sides of any square, only at the vertices.

Can you find the eight hidden squares?

NRICH Eight Hidden Squares

<https://nrich.maths.org/6280>

Week 3_Maths_Further Challenges

A Cartesian Puzzle

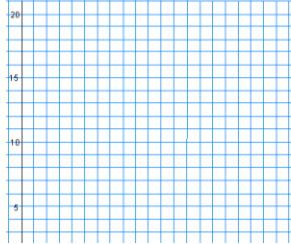
Age 7 to 11 ★

Here are the coordinates of some quadrilaterals, but in each case one coordinate is missing! The coordinates are given going round each quadrilateral in an anti-clockwise direction.

1. (2, 11), (0, 9), (2, 7), (?, ?)
2. (3, 7), (3, 4), (8, 4), (?, ?)
3. (18, 3), (16, 5), (8, 5), (?, ?)
4. (13, 12), (15, 14), (12, 17), (?, ?)
5. (7, 14), (6, 11), (7, 8), (?, ?)
6. (15, 9), (19, 9), (16, 11), (?, ?)
7. (11, 3), (15, 2), (16, 6), (?, ?)
8. (9, 16), (2, 9), (9, 2), (?, ?)

The quadrilaterals are all symmetrical. This may be rotational or line symmetry or both. Can you work out what the missing coordinates are if you know they are all positive? Is there more than one way to find out?

Now plot those eight missing coordinates on a graph like this. What shape do they make and what sort of symmetry does it have?



NRICH A Cartesian Puzzle

<https://nrich.maths.org/1110>