



A Cartesian Puzzle

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. $(14,3), (16,5), (12,5), (?,?)$
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. They may have rotational symmetry, 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 the one below.

What shape do they make and what sort of symmetry does it have?

