

Reasoning and Problem Solving

Step 2: Four Quadrants

National Curriculum Objectives:

Mathematics Year 6: (6P3) [Describe positions on the full coordinate grid \(all four quadrants\)](#)

Differentiation:

Questions 1, 4 and 7 (Reasoning)

Developing Explain if the coordinates make a given shape by plotting them in all four quadrants. Includes grids from -5 to 5 with 3 or 4 points plotted, spanning two quadrants per question.

Expected Explain if the coordinates make a given shape by plotting them in all four quadrants. Includes grids from -5 to 5 with 3 or 4 points plotted.

Greater Depth Explain if the coordinates make a given shape by plotting them in all four quadrants. Up to 6 points plotted, including irregular shapes. Includes grids of varying scales with some points plotted between labelled increments.

Questions 2, 5 and 8 (Problem Solving)

Developing Follow the clues to find the coordinates of the rectangle or square using all four quadrants. Includes grids from -5 to 5 spanning two quadrants per question with 3 or 4 points to be plotted.

Expected Follow the clues to find the coordinates of the quadrilateral using all four quadrants. Includes grids from -5 to 5 with 3 or 4 points to be plotted.

Greater Depth Follow the clues to find the coordinates of the shape using all four quadrants. Up to 6 points to be plotted. Includes grids of varying scales with some points to be plotted between labelled increments.

Questions 3, 6 and 9 (Problem Solving)

Developing Write the missing coordinate of a rectangle or square using all four quadrants. Includes grids from -5 to 5 spanning two quadrants per question with 3 points plotted.

Expected Write the missing coordinate of a triangle using all four quadrants. Includes grids from -5 to 5 with 2 points plotted.

Greater Depth Write the missing coordinate of a shape using all four quadrants with 3 points plotted. Includes grids of varying scales with some points plotted between labelled increments.

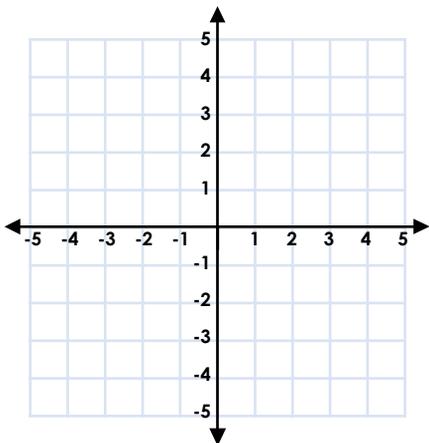
More [Year 6 Position and Direction](#) resources.

Did you like this resource? Don't forget to [review](#) it on our website.

Four Quadrants

1a. Zara thinks that the coordinates below make a rectangle.

$(-1, 3)$
 $(2, 3)$
 $(2, -1)$
 $(-1, -1)$



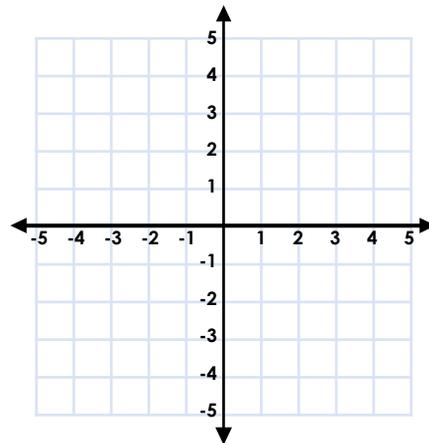
Is she correct? Explain why.

R

Four Quadrants

1b. Jake thinks that the coordinates below make a square.

$(-2, 4)$
 $(1, 4)$
 $(1, 1)$
 $(-2, 1)$



Is he correct? Explain why.

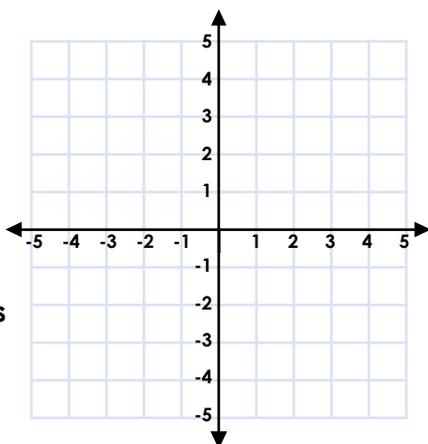
R

2a. Follow the clues. What could the missing coordinates of the shape be?

The shape is in two quadrants.

The shape is a square.

One of the points is $(-1, -1)$.



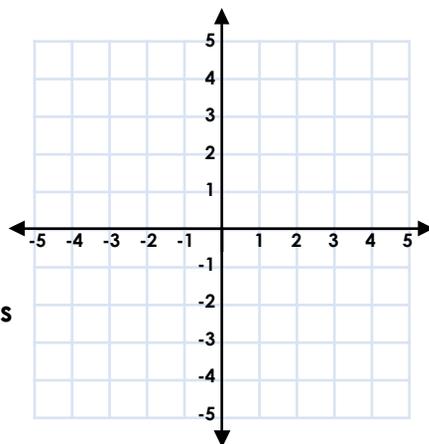
PS

2b. Follow the clues. What could the missing coordinates of the shape be?

The shape is in two quadrants.

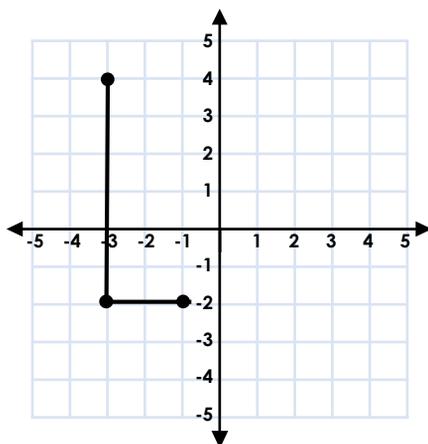
The shape is a rectangle.

One of the points is $(3, 1)$.



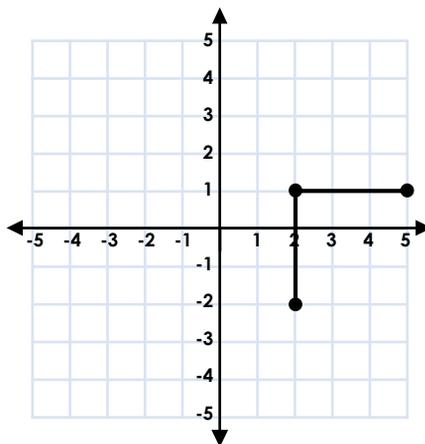
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3a. Jack is plotting the coordinates of a rectangle. Find the missing coordinate.



PS

3b. Milly is plotting the coordinates of a square. Find the missing coordinate.

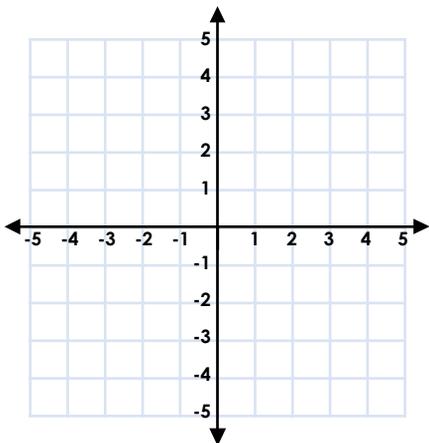


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Four Quadrants

4a. Holly thinks that the coordinates below make a rectangle.

$(-4, 2)$
 $(1, 2)$
 $(1, -3)$
 $(-3, -3)$



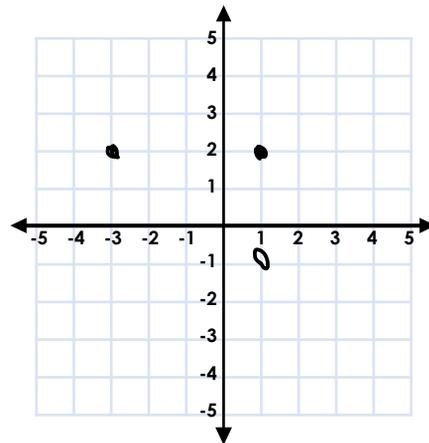
Is she correct? Explain why.

R

Four Quadrants

4b. Max thinks that the coordinates below make a square.

$(-3, 2)$
 $(1, 2)$
 $(1, -1)$
 $(-3, -1)$



Is he correct? Explain why.

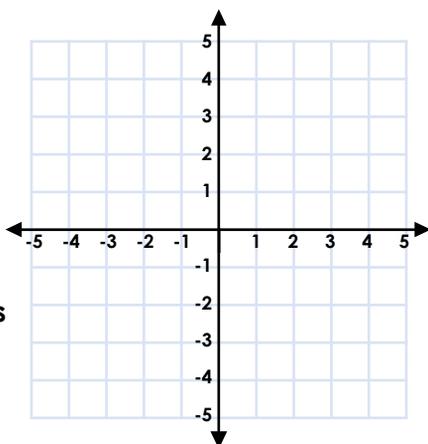
R

5a. Follow the clues. What could the missing coordinates of the shape be?

The shape is in four quadrants.

The shape is a square.

One of the points is $(2, -1)$.



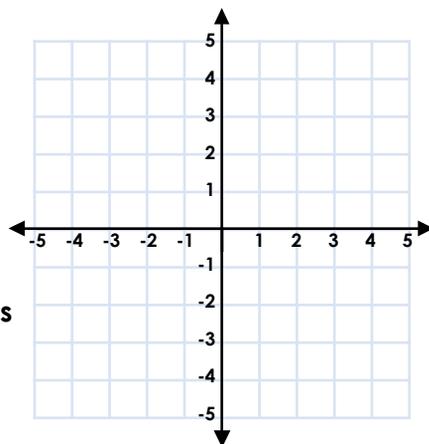
PS

5b. Follow the clues. What could the missing coordinates of the shape be?

The shape is in four quadrants.

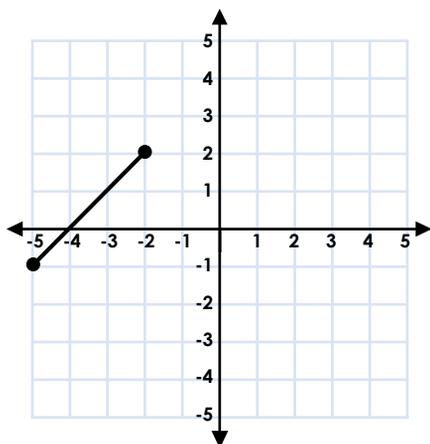
The shape is a rectangle.

One of the points is $(-3, -1)$.



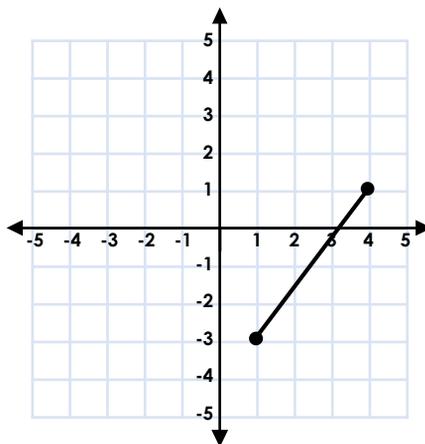
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6a. Stan is plotting the coordinates of a triangle with a vertical line of symmetry. Find the missing coordinate.



PS

6b. Lisa is plotting the coordinates of a triangle with a horizontal line of symmetry. Find the missing coordinate.

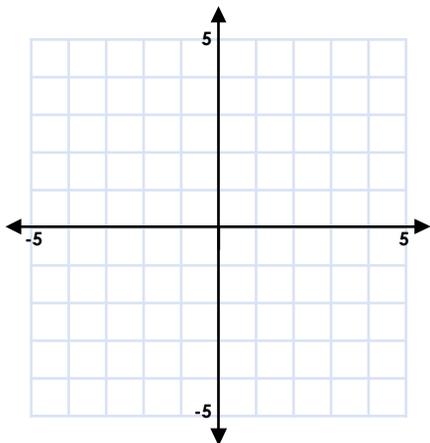


PS

Four Quadrants

7a. Sam thinks that the coordinates below make a hexagon with a vertical line of symmetry.

(-1, -1)
(1, -1)
(2, 1)
(-2, 1)
(2, 3)
(-1, 3)



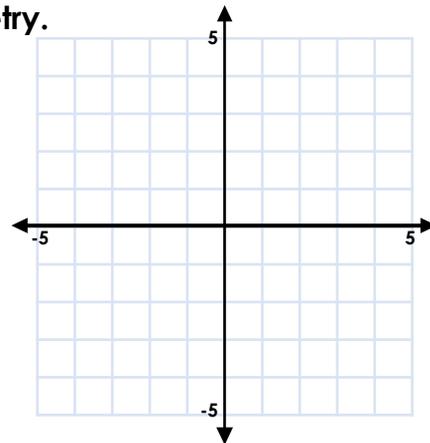
Is he correct? Explain why.

R

Four Quadrants

7b. Daisy thinks that the coordinates below make a pentagon with a vertical line of symmetry.

(0, 1)
(2, 0)
(1, -1)
(-1, -2)
(-2, 0)



Is she correct? Explain why.

R

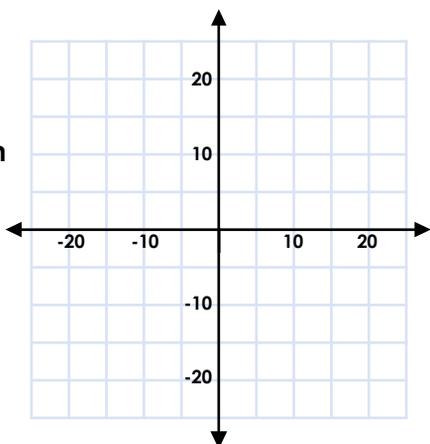
8a. Follow the clues. What could the missing coordinates of the shape be?

The shape has one pair of parallel sides.

The shape has fewer sides than a hexagon.

The shape crosses all four quadrants.

One of the points is (-15, -20).



PS

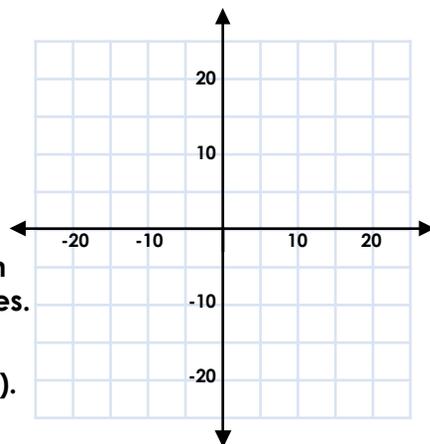
8b. Follow the clues. What could the missing coordinates of the shape be?

The shape is a regular polygon.

The shape crosses all four quadrants.

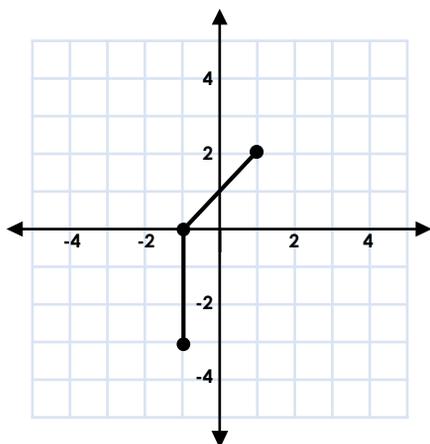
At least three points have 0 in their coordinates.

One of the points is (10, 10).



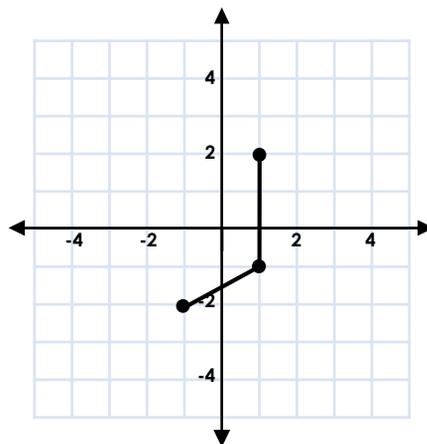
PS

9a. Ben is plotting the coordinates of a pentagon with a vertical line of symmetry. Find the missing coordinates.



PS

9b. Jess is plotting the coordinates of a hexagon with a horizontal line of symmetry. Find the missing coordinates.



PS

Reasoning and Problem Solving Four Quadrants

Developing

- 1a. Zara is correct because the coordinates make a shape with 2 pairs of equal, straight sides.
2a. Various answers, for example: $(-3, -1)$, $(-3, 1)$, $(-1, 1)$
3a. $(-1, 4)$

Expected

- 4a. Holly is incorrect because the coordinates do not make a shape with 2 pairs of equal, straight sides. The coordinate $(-3, -3)$ should be $(-4, -3)$.
5a. Various answers, for example: $(-1, -1)$, $(2, -1)$, $(2, 2)$
6a. $(1, -1)$

Greater Depth

- 7a. Sam is incorrect because $(2, 3)$ should be $(1, 3)$ to make a hexagon with a vertical line of symmetry.
8a. Various answers, for example: $(-15, 5)$, $(15, -20)$, $(15, 5)$, $(0, 15)$
9a. $(3, 0)$, $(3, -3)$

Reasoning and Problem Solving Four Quadrants

Developing

- 1b. Jake is correct because the coordinates make a shape with 4 equal sides.
2b. Various answers, for example: $(1, 1)$, $(1, -2)$, $(3, -2)$
3b. $(5, -2)$

Expected

- 4b. Max is incorrect because the coordinates do not make a shape with 4 equal sides. The coordinates $(1, -1)$ and $(-3, -1)$ should be $(1, -2)$ and $(-3, -2)$.
5b. Various answers, for example: $(-3, 1)$, $(1, 1)$, $(1, -1)$
6b. $(1, 5)$

Greater Depth

- 7b. Daisy is incorrect because $(1, -1)$ should be $(1, -2)$ to make a pentagon with a vertical line of symmetry.
8b. Various answers, for example: $(0, 10)$, $(-5, 0)$, $(0, -10)$, $(10, -10)$, $(15, 0)$
9b. $(-3, -1)$, $(-3, 2)$, $(-1, 3)$