

Diving into Mastery



Translations



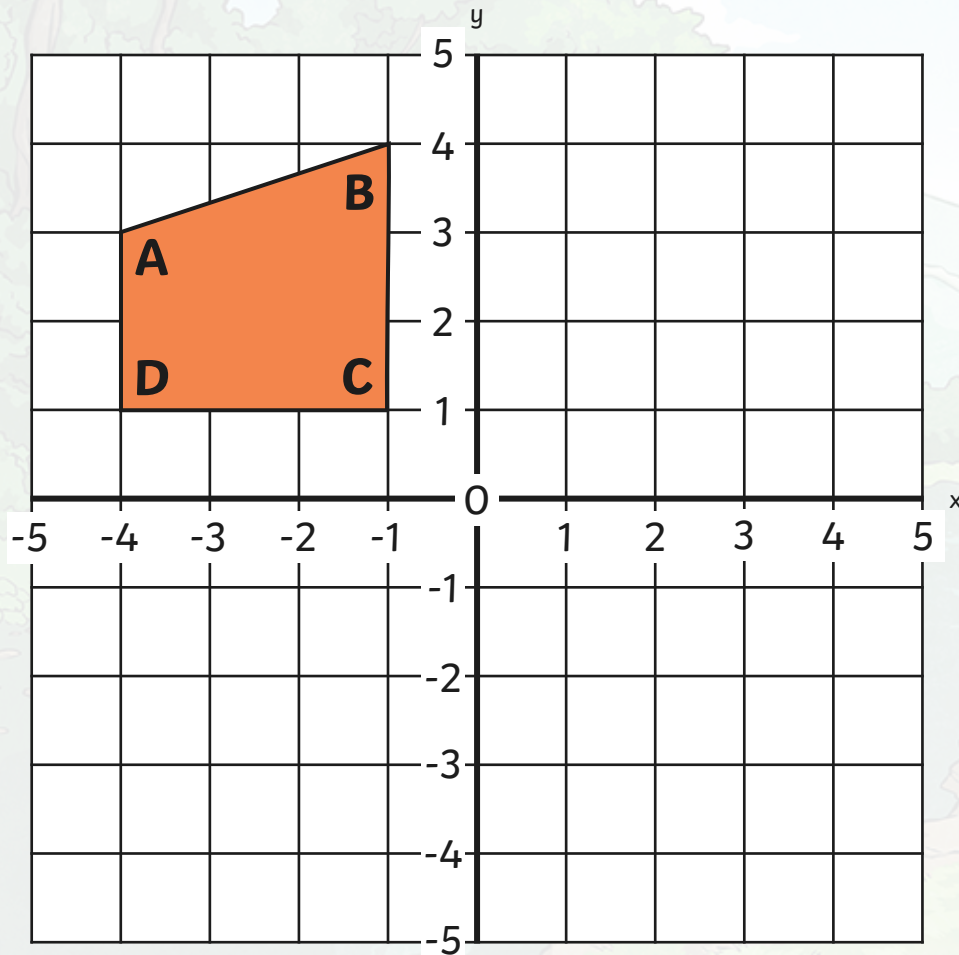
Aim

- Draw and translate simple shapes on the coordinate plane, and reflect them in the axes.

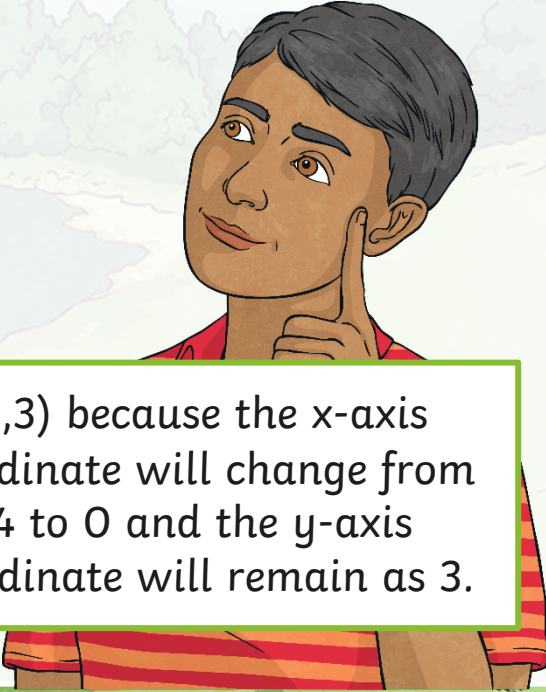




Ramesh has plotted this quadrilateral on a four-quadrant coordinate grid.



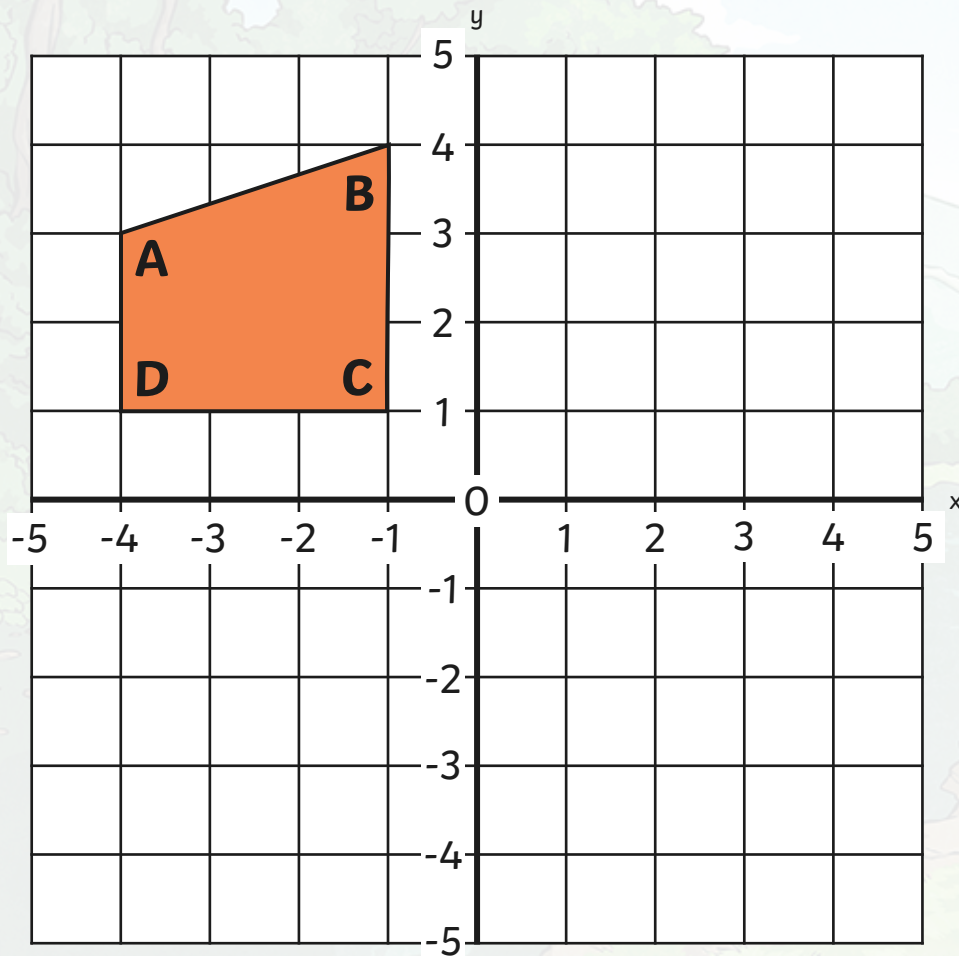
If the quadrilateral is translated 4 squares to the right, what will the new coordinates of vertex A be?

A cartoon illustration of a young boy with dark skin and hair, wearing a red and orange striped shirt. He is looking upwards and to the right with a thoughtful expression, his right hand raised to his chin.

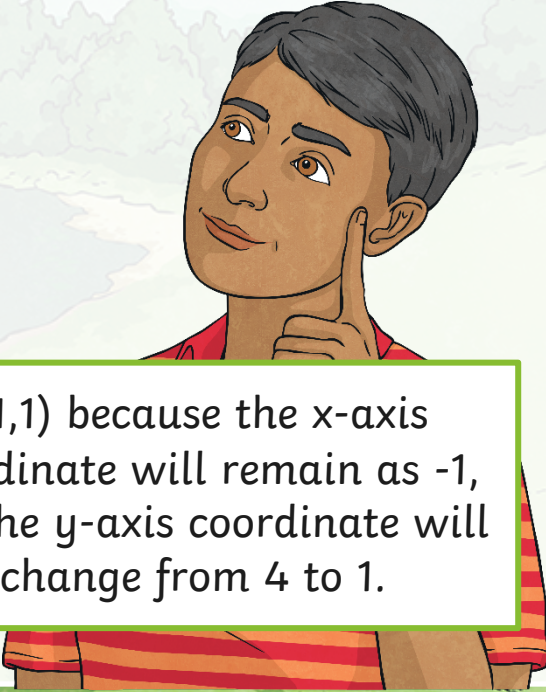
(0,3) because the x-axis coordinate will change from -4 to 0 and the y-axis coordinate will remain as 3.



Ramesh has plotted this quadrilateral on a four-quadrant coordinate grid.



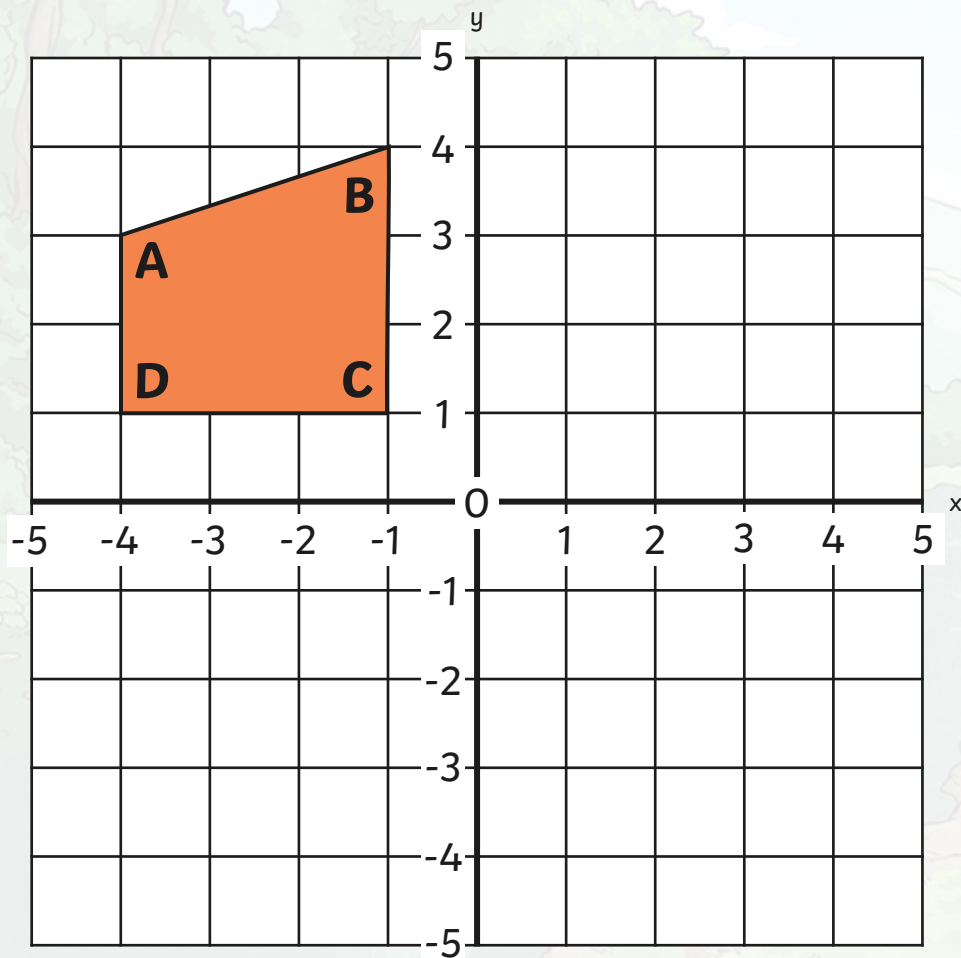
If the quadrilateral is translated 3 squares down, what will the new coordinates of vertex B be?



(-1,1) because the x-axis coordinate will remain as -1, but the y-axis coordinate will change from 4 to 1.



Ramesh has plotted this quadrilateral on a four-quadrant coordinate grid.



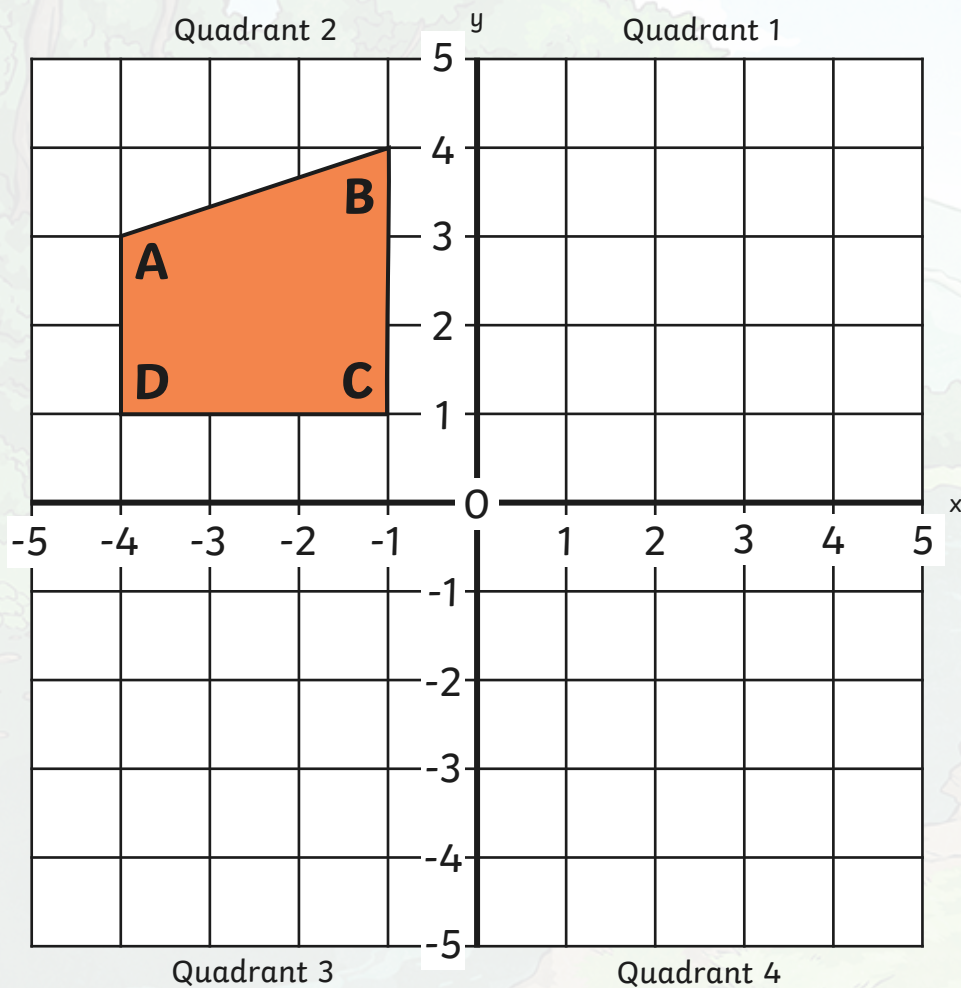
If the quadrilateral is translated 4 squares to the right and 5 squares down, what will the new coordinates of vertex C be?



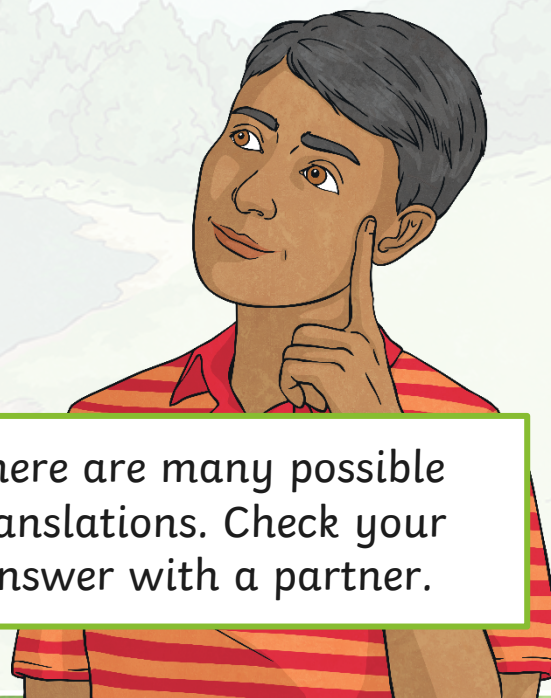
(3,-4) because the x-axis coordinate will change from -1 to 3 and the y-axis coordinate will change from 1 to -4.



Ramesh has plotted this quadrilateral on a four-quadrant coordinate grid.



Describe any translation that will result in vertex D being in the fourth quadrant.

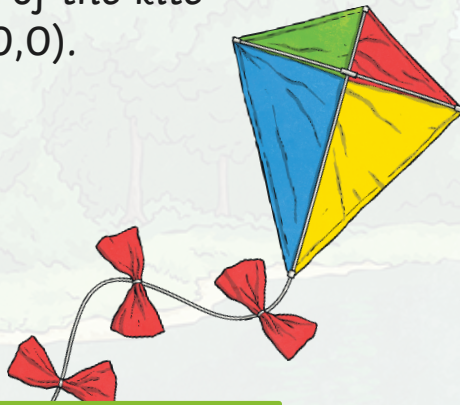


There are many possible translations. Check your answer with a partner.



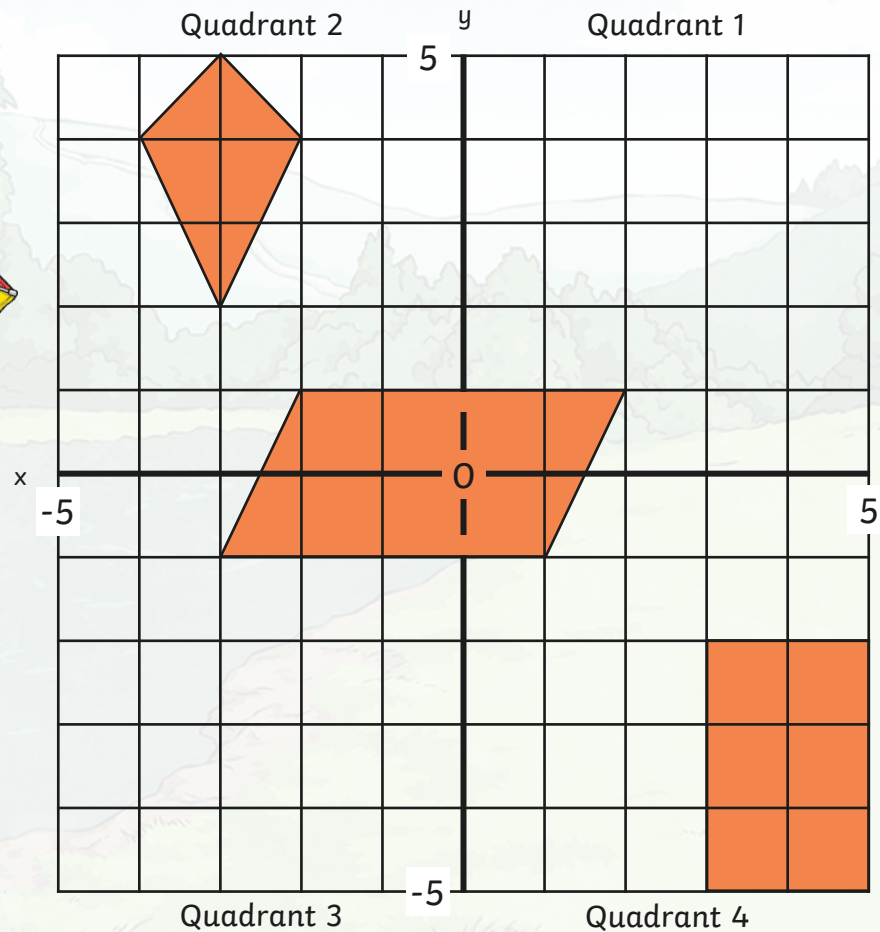
Is this statement about one of the quadrilaterals on this four-quadrant coordinate grid true or false? Explain your answer using reasoning.

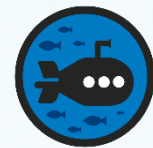
After a translation of 2 squares to the right and 2 squares down, one of the vertices of the kite would be at $(0,0)$.



False

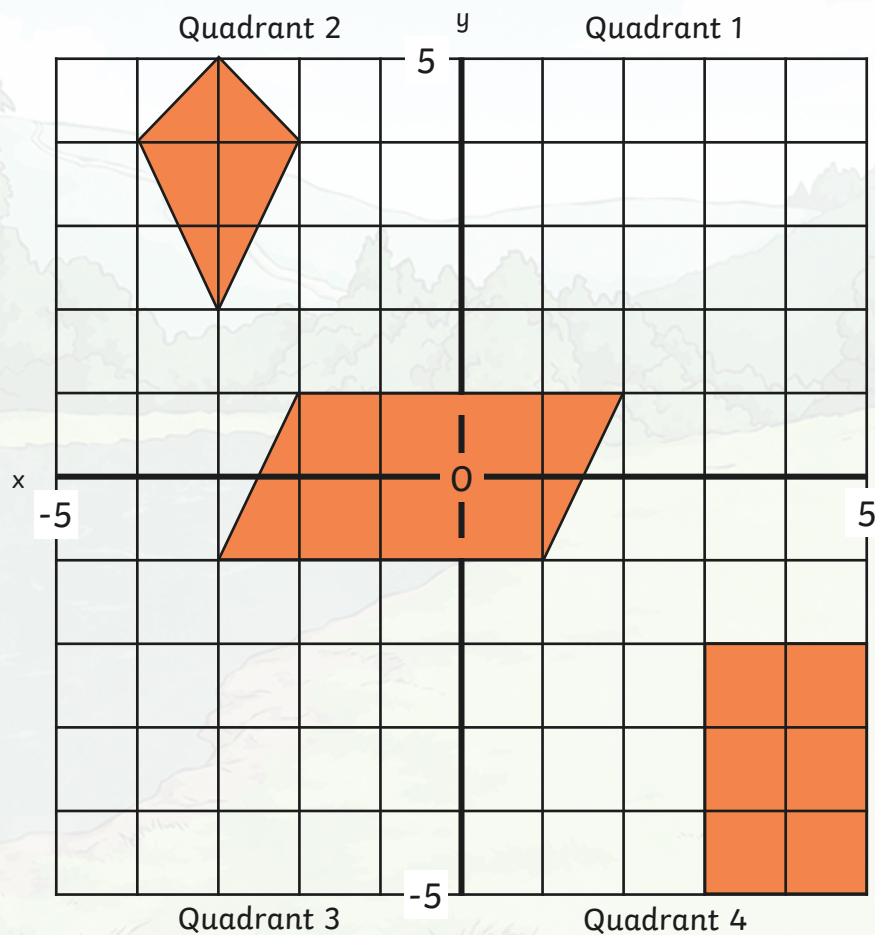
The new coordinates of the kite would be $(-1,3)$, $(0,2)$, $(-1,0)$ and $(-2,2)$.





Is this statement about one of the quadrilaterals on this four-quadrant coordinate grid true or false? Explain your answer using reasoning.

The rectangle is translated so that one of the vertices is now at $(-3, -2)$. The only way to describe the translation is 6 squares left.



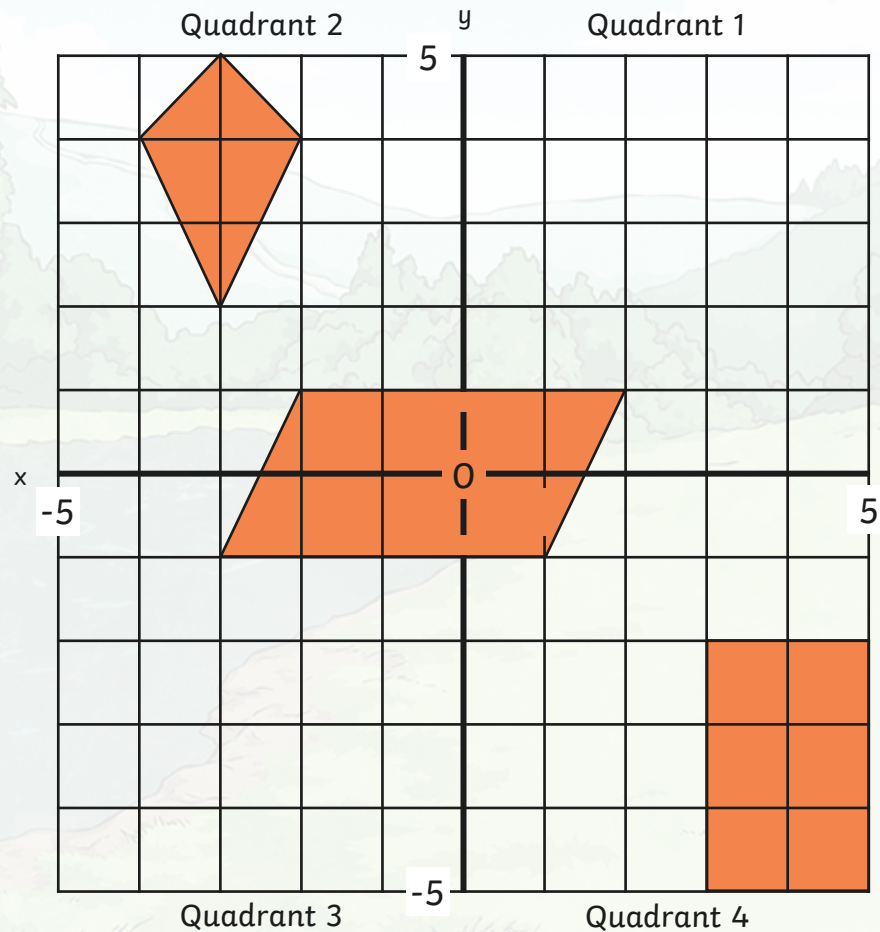
False

The translations could also be:
8 squares left
6 squares left and 3 squares up
8 squares left and 3 squares up



Is this statement about one of the quadrilaterals on this four-quadrant coordinate grid true or false? Explain your answer using reasoning.

After a translation of 2 squares to the right and 2 squares up, all of the vertices of the parallelogram will be in quadrant 1.

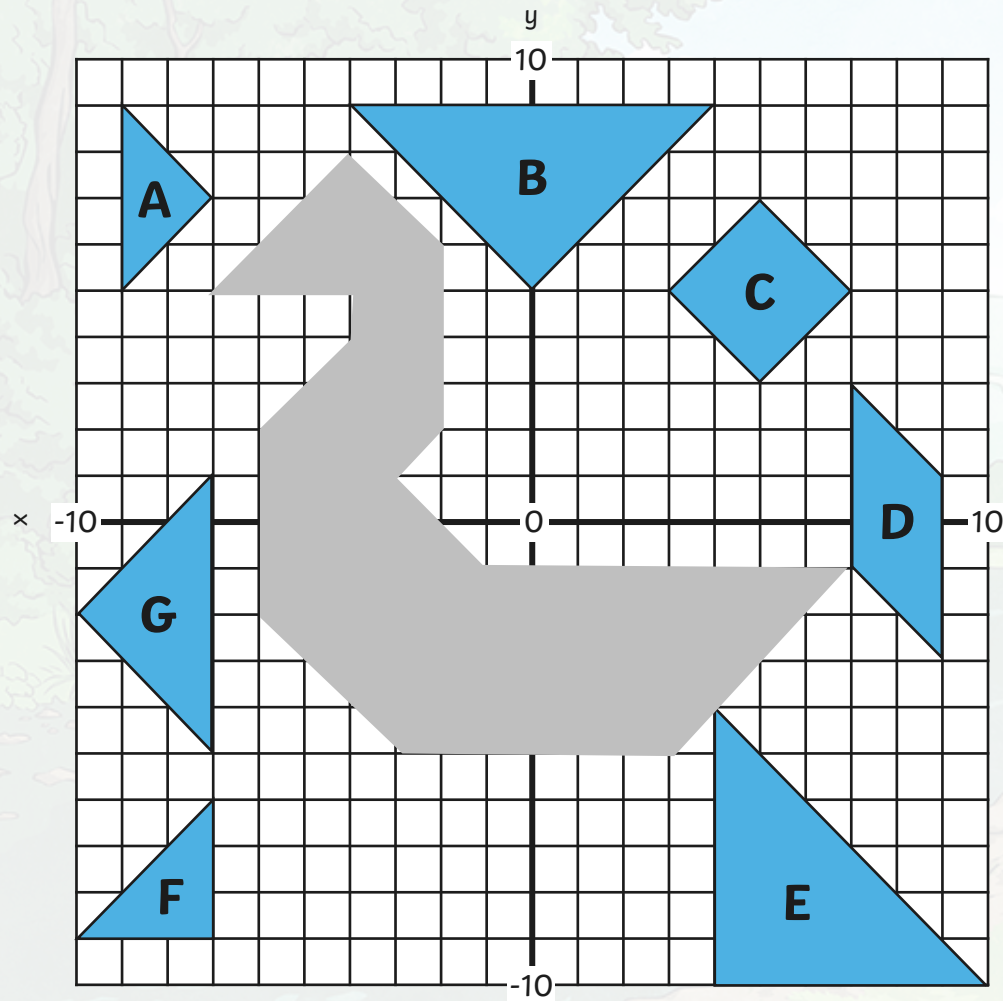


False

The coordinates of one of the vertices would be $(-1, 1)$, which is in quadrant 2.

Translations

Deepest

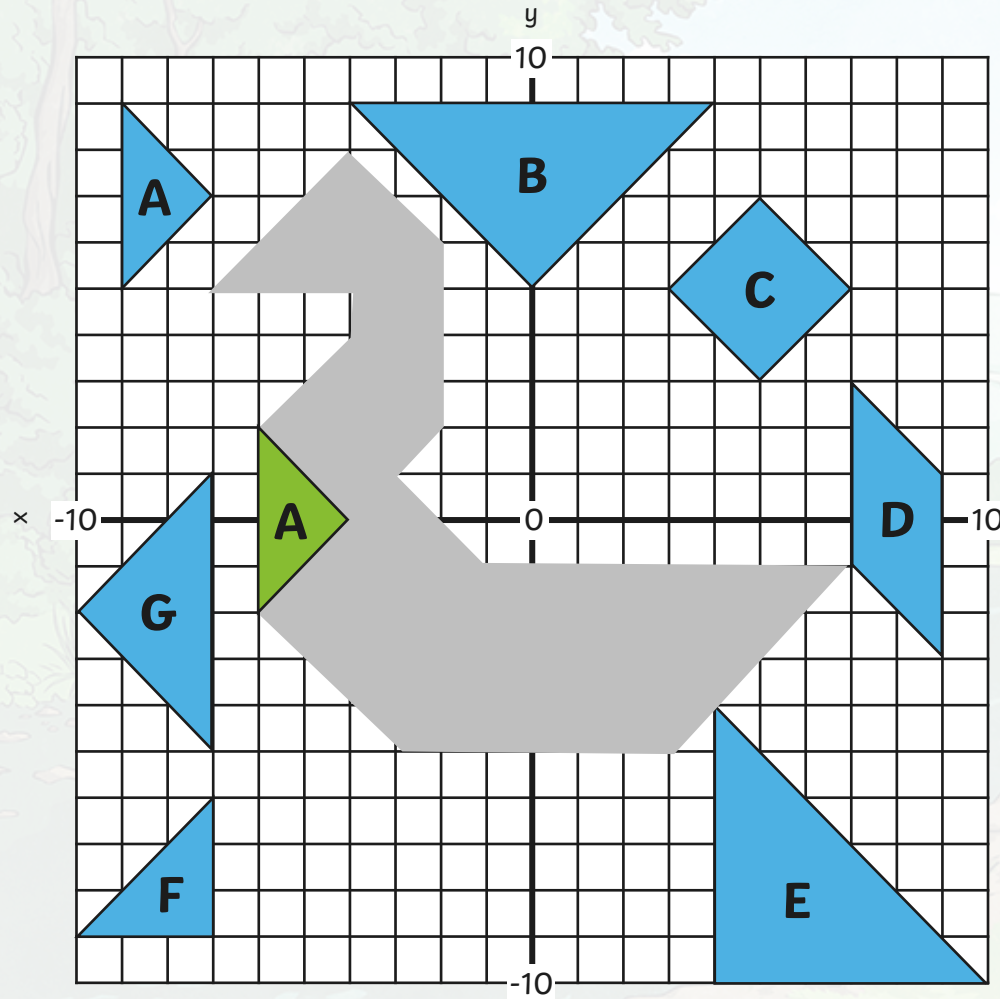


Translate the shapes into position to create the shaded swan. Record your translations and the starting and finishing coordinates of the vertices of each shape.



Translations

Deepest

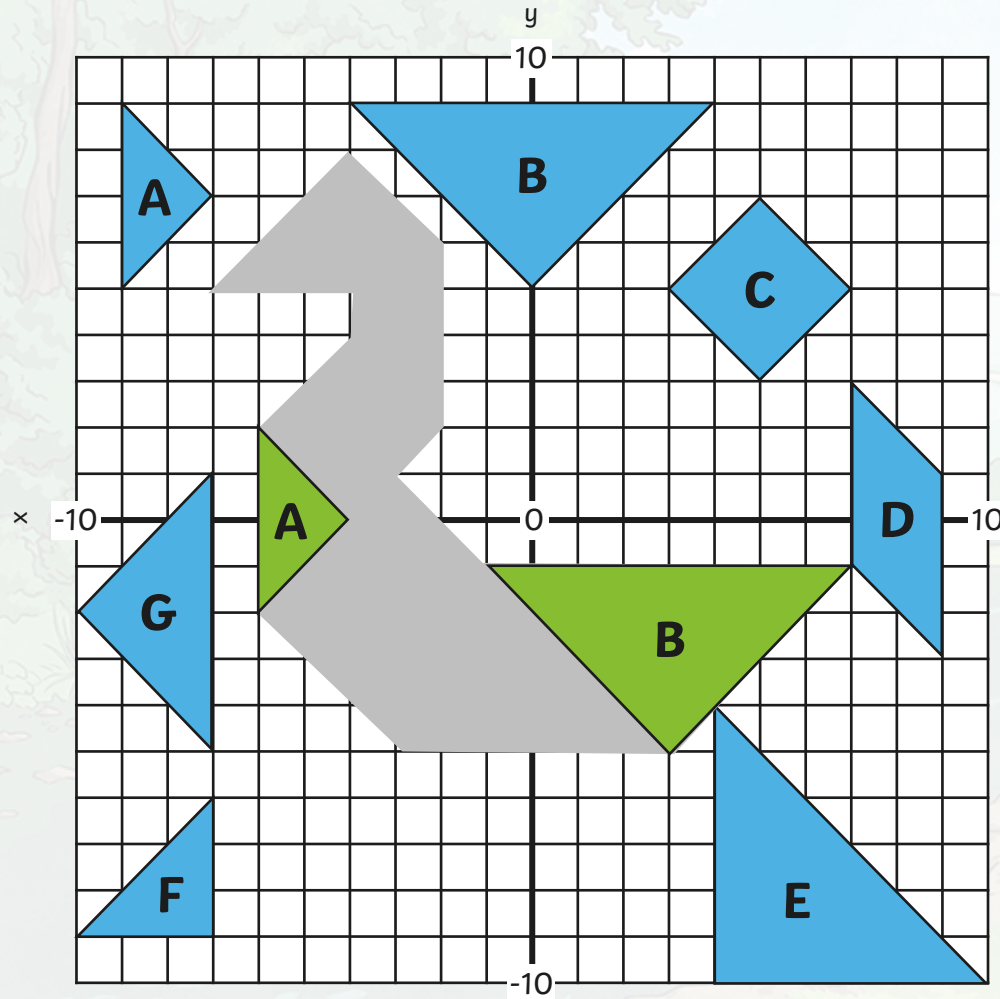


Translate each shape into position to create the shaded swan. Record your translation and the starting and finishing coordinates of the vertices.

Shape:	
Starting Coordinates:	
Translation:	
Finishing Coordinates:	

Translations

Deepest

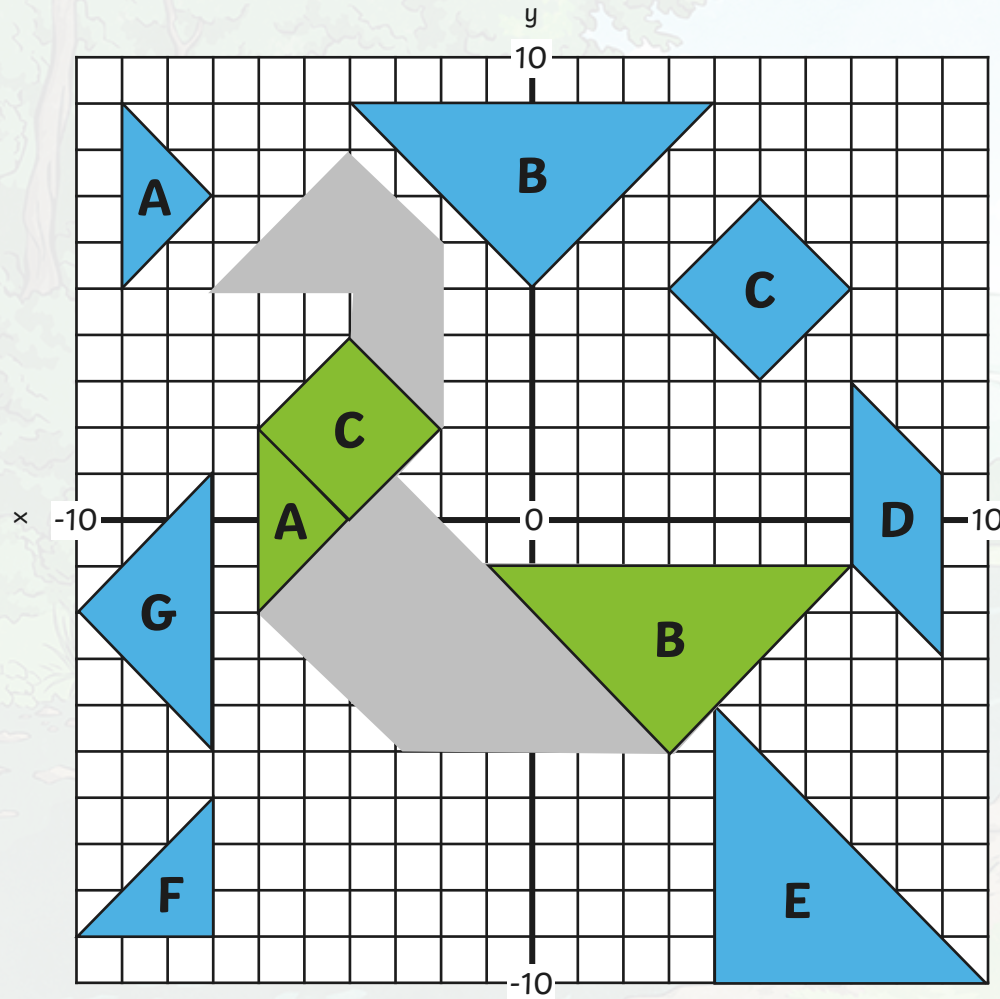


Translate each shape into position to create the shaded swan. Record your translation and the starting and finishing coordinates of the vertices.

Shape:	
Starting Coordinates:	
Translation:	
Finishing Coordinates:	

Translations

Deepest

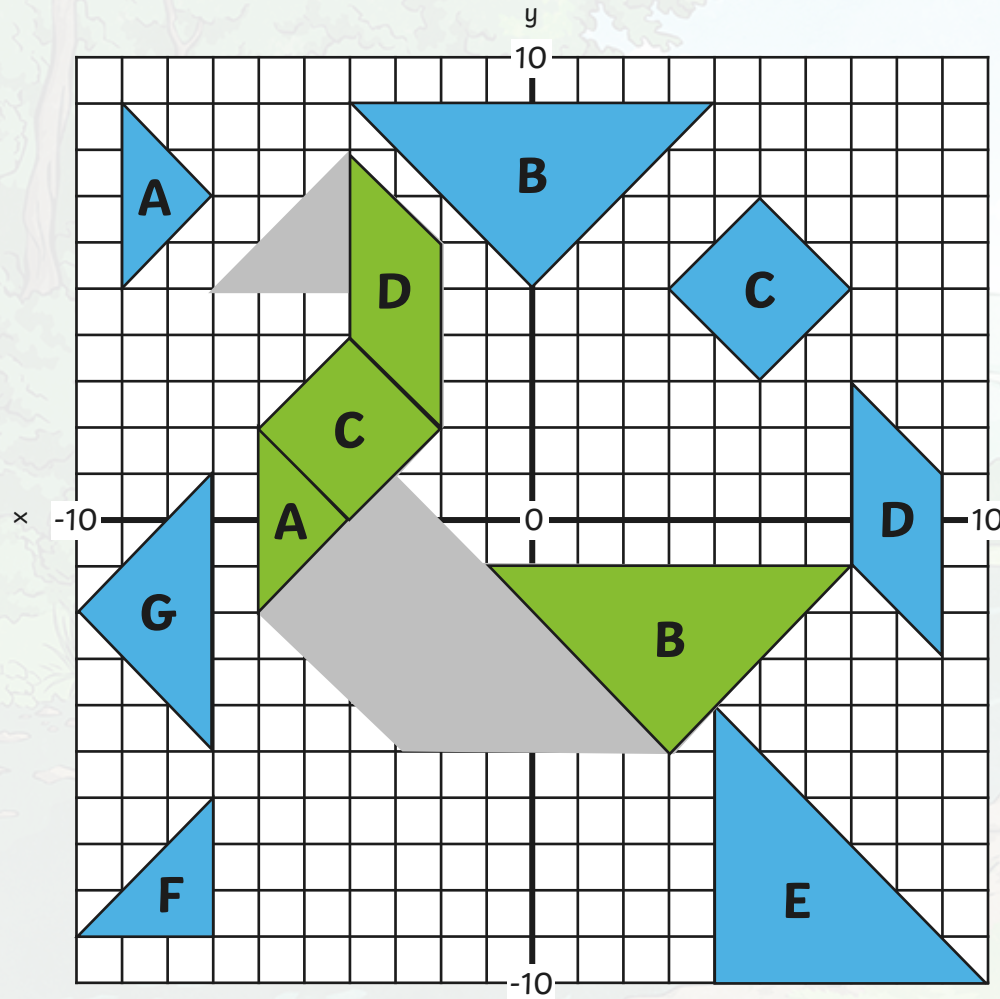


Translate each shape into position to create the shaded swan. Record your translation and the starting and finishing coordinates of the vertices.

Shape:	
Starting Coordinates:	
Translation:	
Finishing Coordinates:	

Translations

Deepest

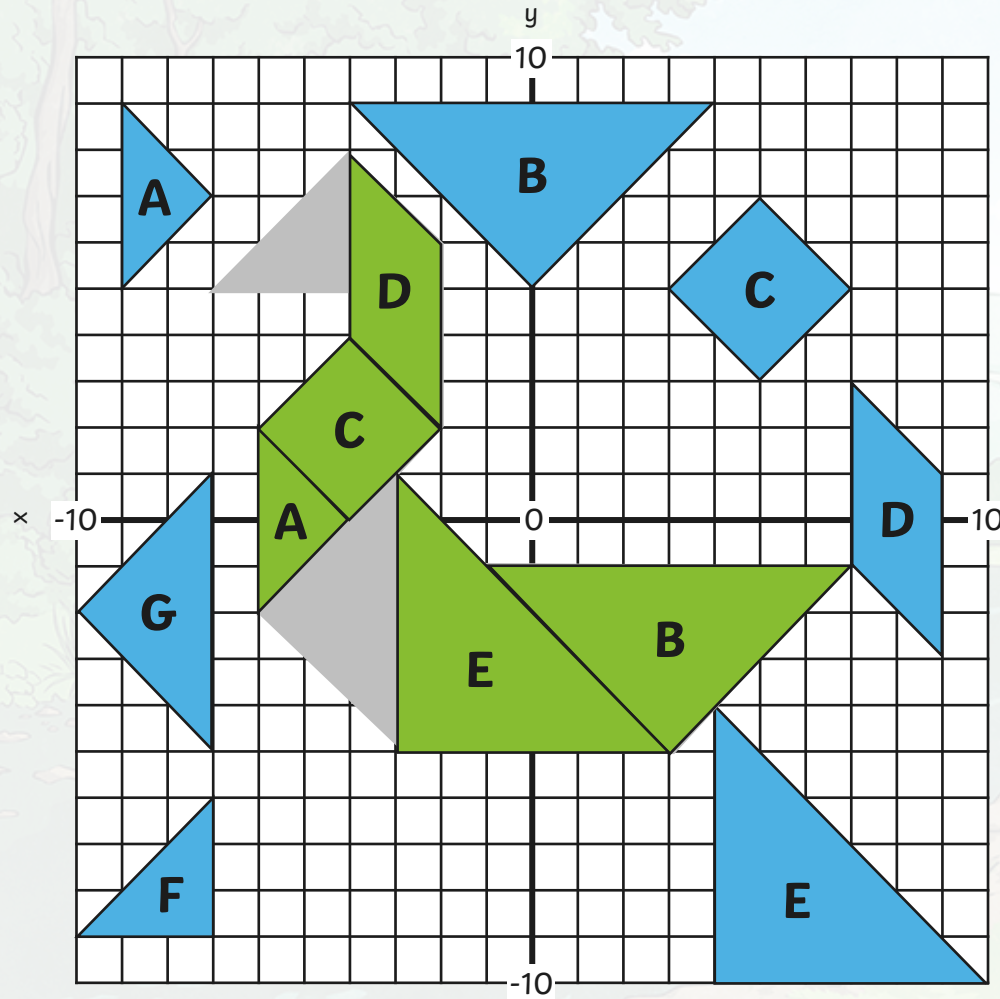


Translate each shape into position to create the shaded swan. Record your translation and the starting and finishing coordinates of the vertices.

Shape:	
Starting Coordinates:	
Translation:	
Finishing Coordinates:	

Translations

Deepest

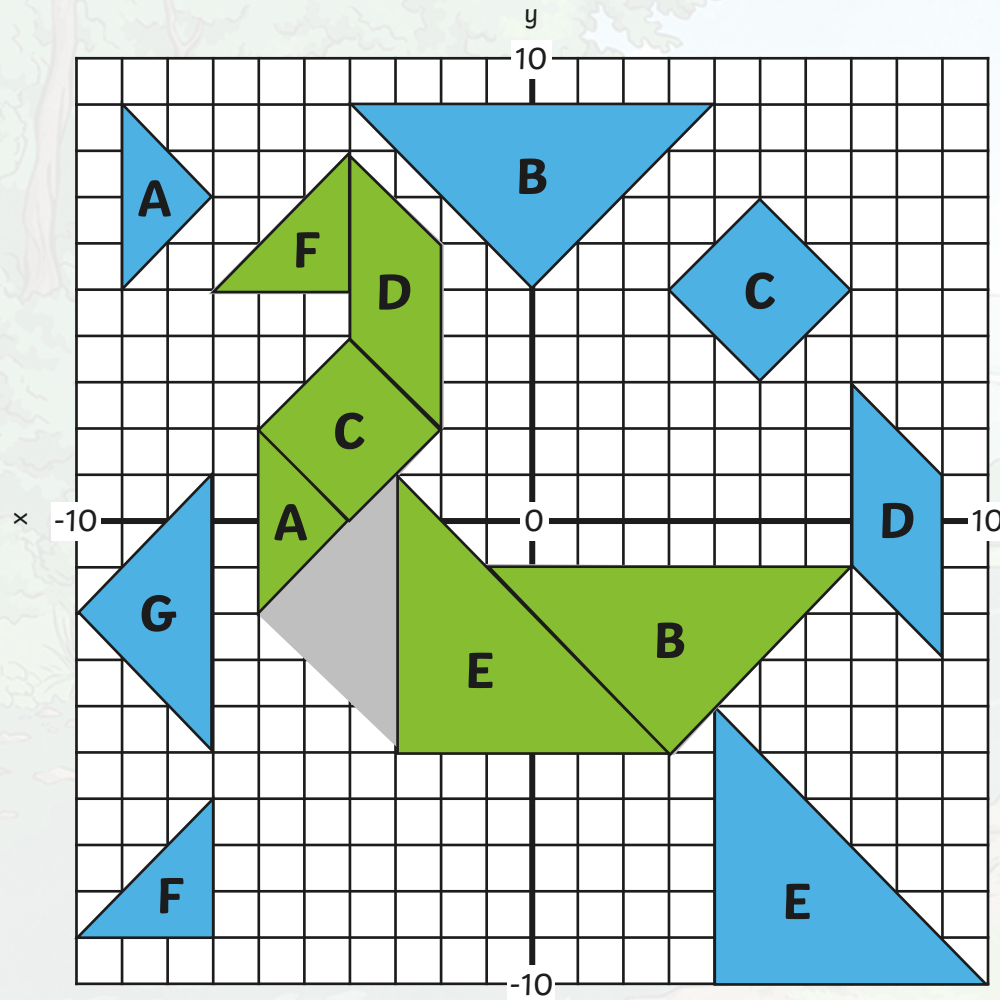


Translate each shape into position to create the shaded swan. Record your translation and the starting and finishing coordinates of the vertices.

Shape:	
Starting Coordinates:	
Translation:	
Finishing Coordinates:	

Translations

Deepest

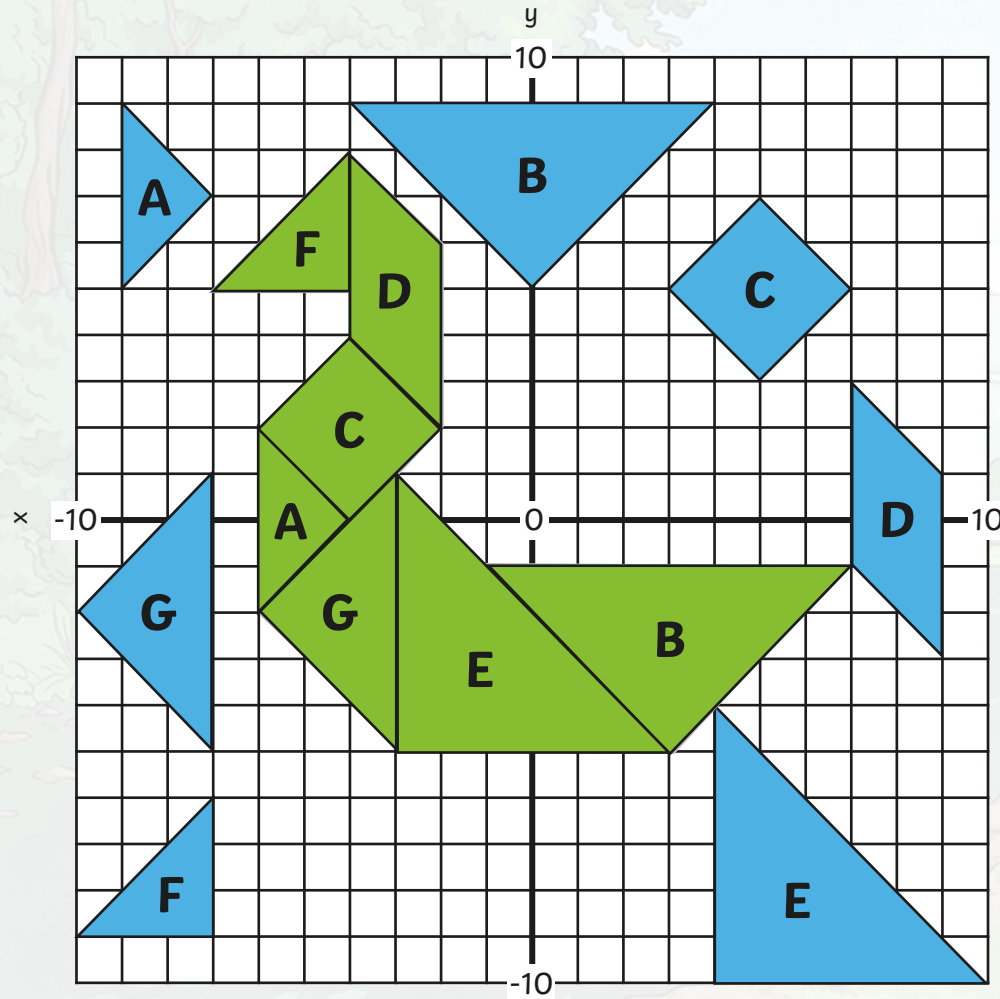


Translate each shape into position to create the shaded swan. Record your translation and the starting and finishing coordinates of the vertices.

Shape:	
Starting Coordinates:	
Translation:	
Finishing Coordinates:	

Translations

Deepest

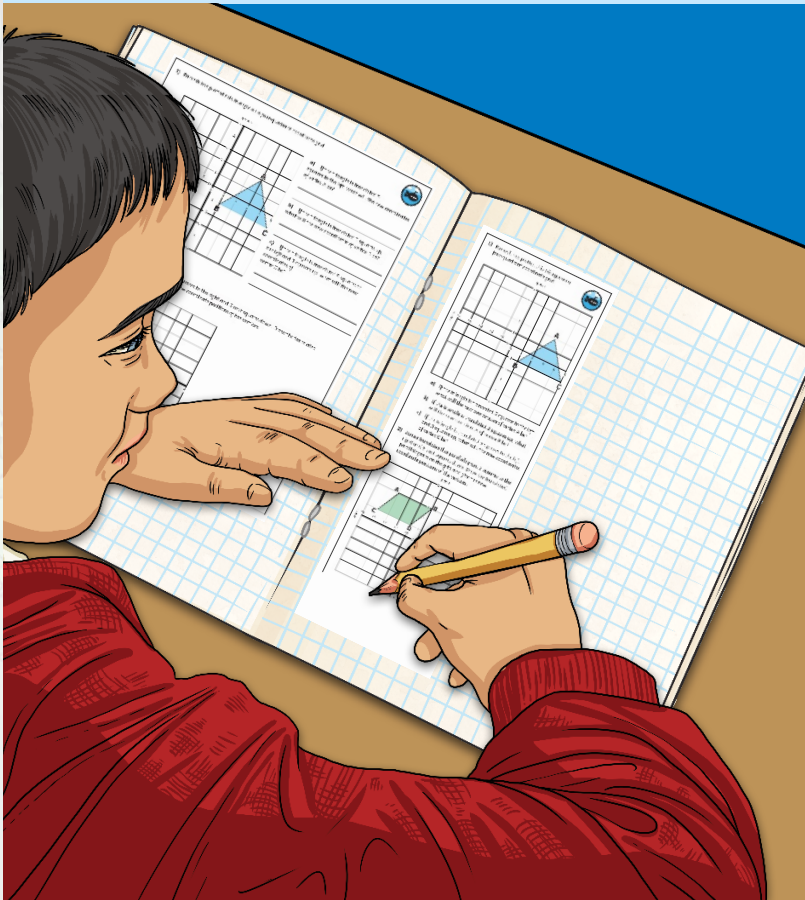


Translate each shape into position to create the shaded swan. Record your translation and the starting and finishing coordinates of the vertices.

Shape:	
Starting Coordinates:	
Translation:	
Finishing Coordinates:	

Translations

Dive in by completing your own activity!



1) Translate the triangle on the grid and label the new vertices.

2) Are these two triangles the same? Explain your answer.

1) Ramesh has plotted this triangle on a four-quadrant coordinate grid.

a) If the triangle is translated 5 squares to the left, what will the new coordinates of vertex A be?

b) If the triangle is translated 3 squares up, what will the new coordinates of vertex B be?

c) If the triangle is translated 5 squares to the left and 3 squares up, what will the new coordinates of vertex C be?

2) James translates this parallelogram 3 squares to the right and 5 unit squares down. Draw the translated parallelogram on the grid and give the new coordinate positions of the vertices.

Need Planning to Complement this Resource?

National Curriculum Aim

Draw and translate simple shapes on the coordinate plane, and reflect them in the axes.

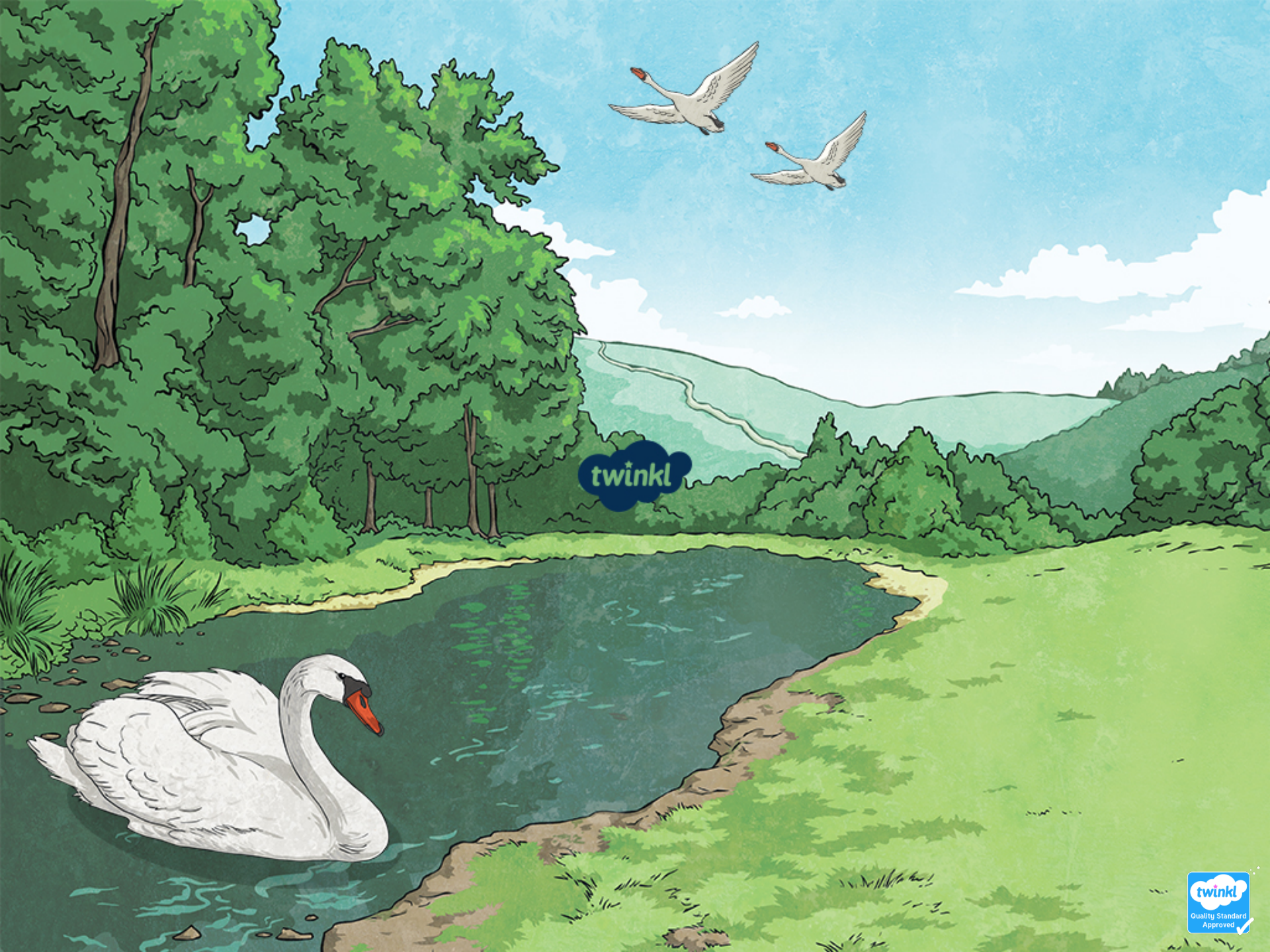
For more planning resources to support this aim, [click here](#).

This collage features three main resource cards: '2D Shape Coordinate Positions' showing a coordinate grid with shapes and their coordinates; 'Drawing Coordinate Shapes' with a large play button; and 'Four Quadrants Coordinates' featuring an alien character and instructions on plotting points. Below these are smaller thumbnails for 'Position and Direction: Drawing Coordinate Shapes', 'Alien Force' (a coordinate grid with alien icons), and 'Alien Force Field Coordinate Game' (a coordinate grid with alien icons and a game board).

This collage features three main resource cards: 'Spot the Mistake' with a coordinate grid and a list of points (A(-3, -4), B(2, -4), C(2, -1), D(-6, -1)); 'Coordinate Shape Reasoning' with a large play button; and 'Coordinate Shape Reasoning' with a coordinate grid and a character. Below these are smaller thumbnails for 'Position and Direction: Coordinate Shape Reasoning', 'Coordinate' (a coordinate grid with colored circles), and 'Coordinate Shapes Treasure Game' (a coordinate grid with a treasure map).

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