

# Translation of Shapes



# Aim

- To be able to draw and translate simple shapes on the coordinate plane.

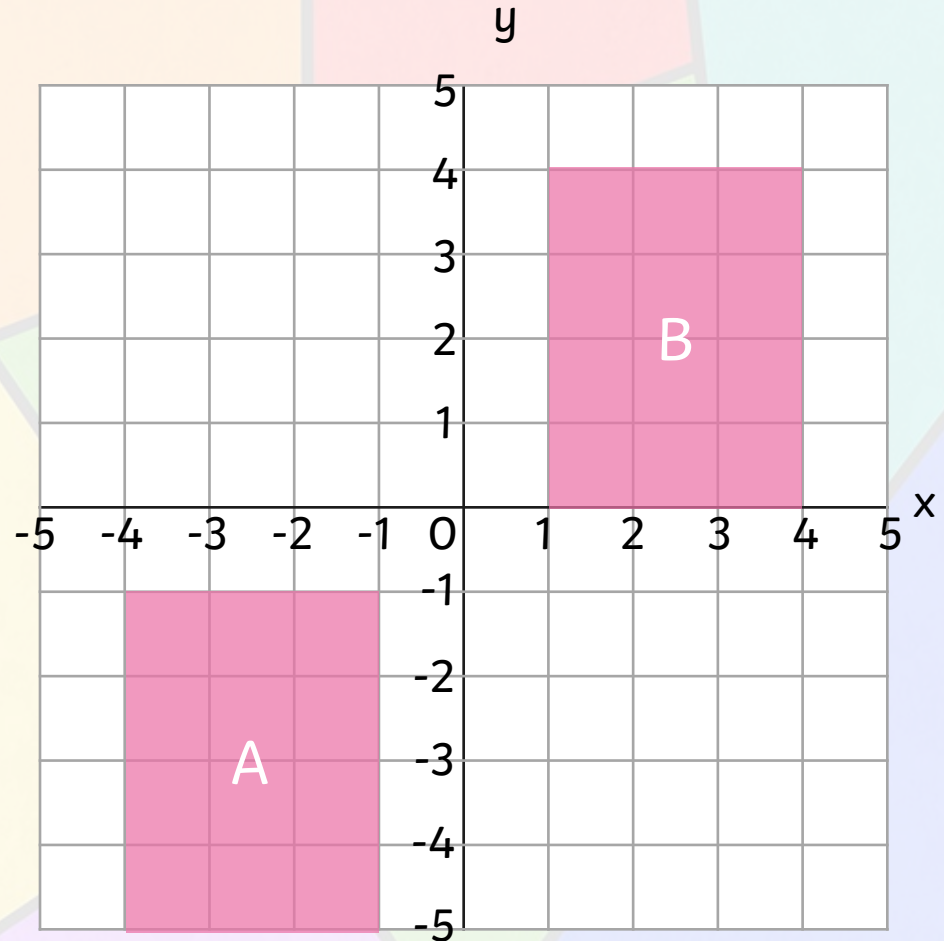
# Success Criteria

- To know what translation of a shape means.
- To know how to translate shapes in all four quadrants.
- To know how to describe how a shape has been translated.

# What Is a Translation?

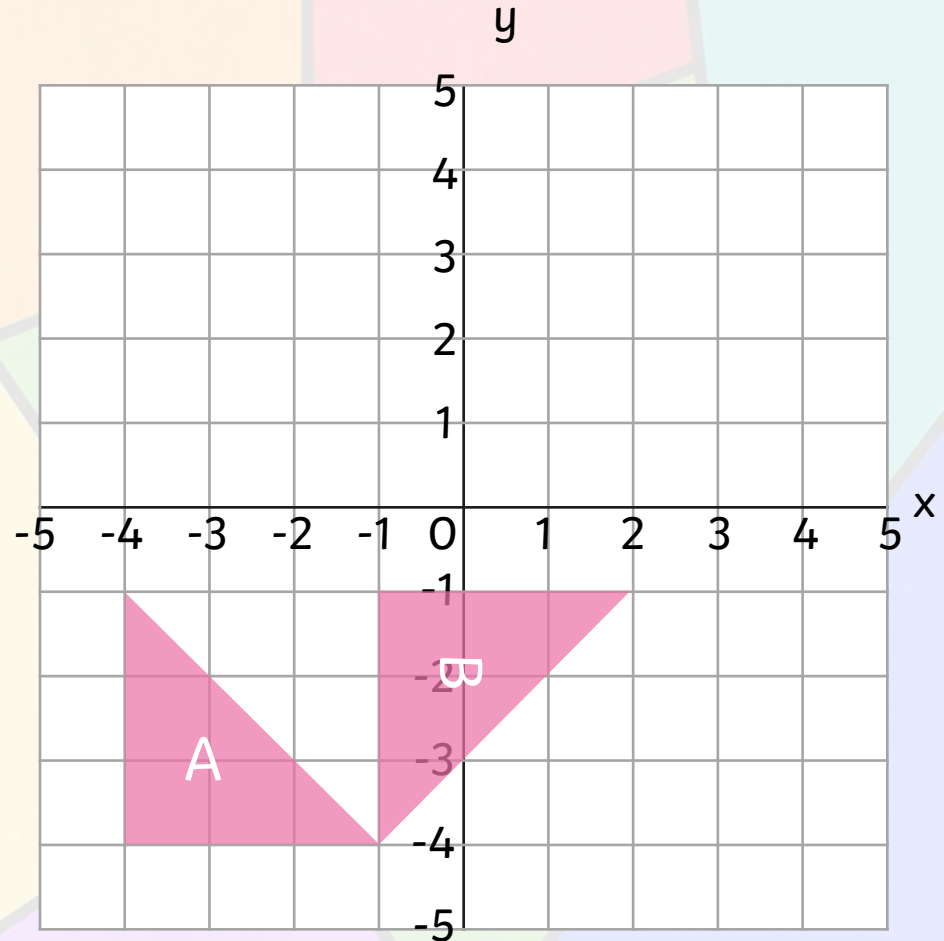
A translation is when a shape moves from one position to another without being rotated or flipped.

On this grid, rectangle A has been translated to position B.



# What Is a Translation?

This is not a translation because the shape has been rotated.



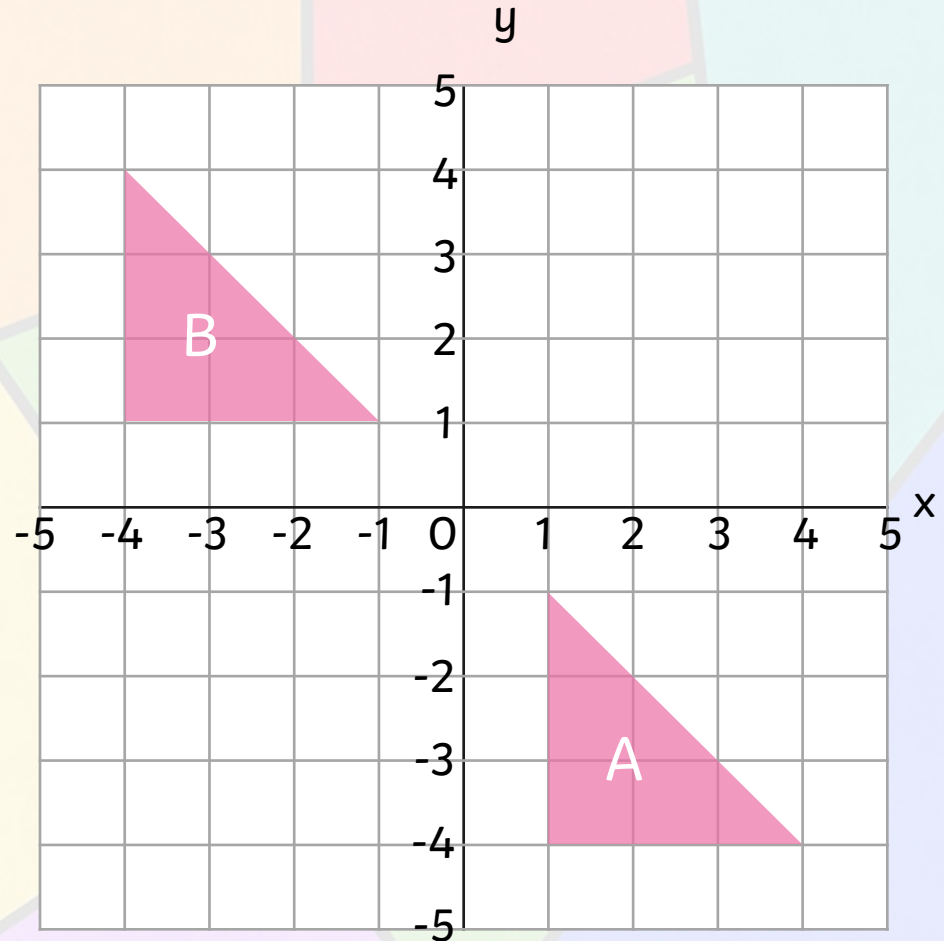


# Translating Shapes

Is this a translation?

**Yes.**

This is a translation.

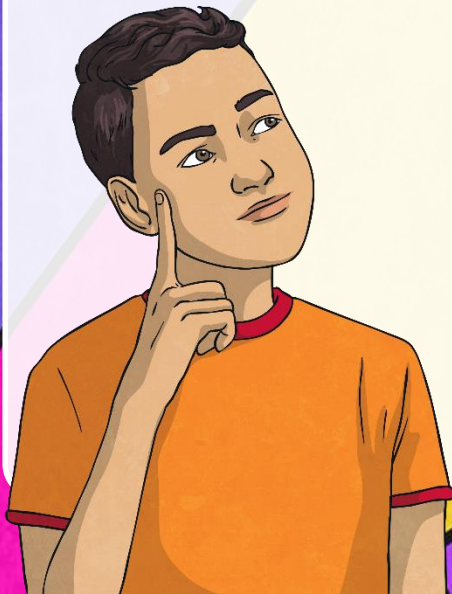
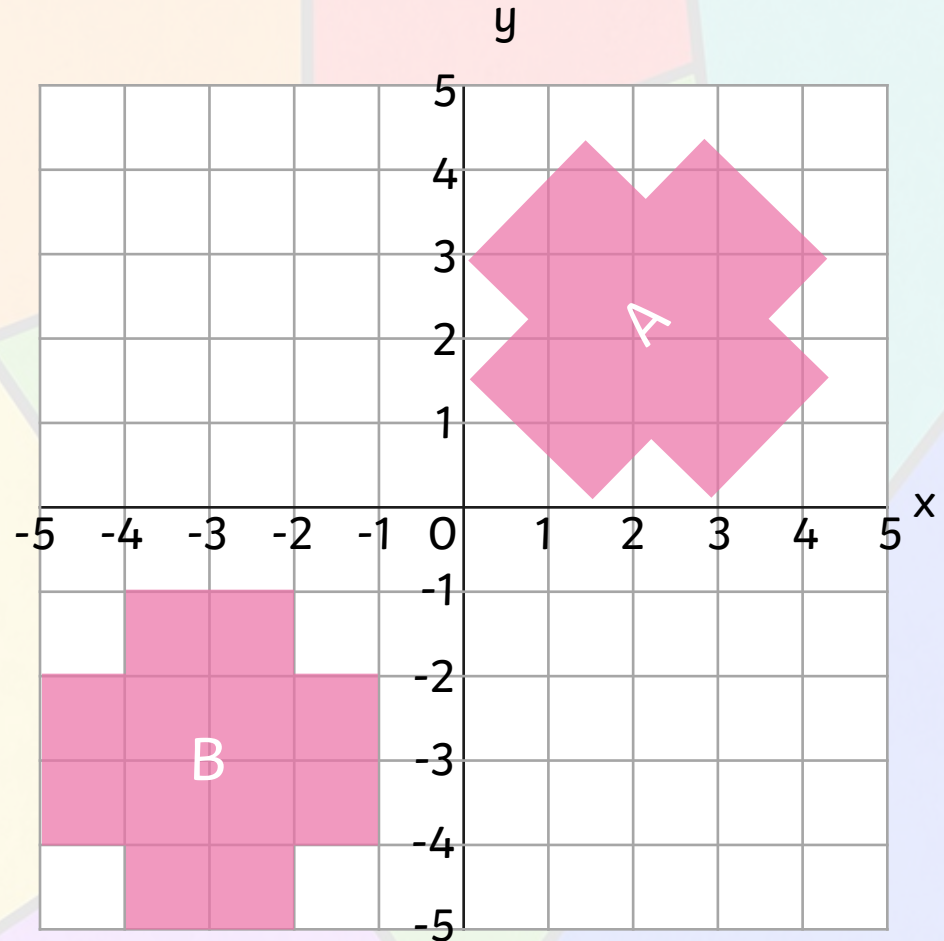


# Translating Shapes

Is this a translation?

**No.**

This is not a translation because the shape has been translated and rotated.

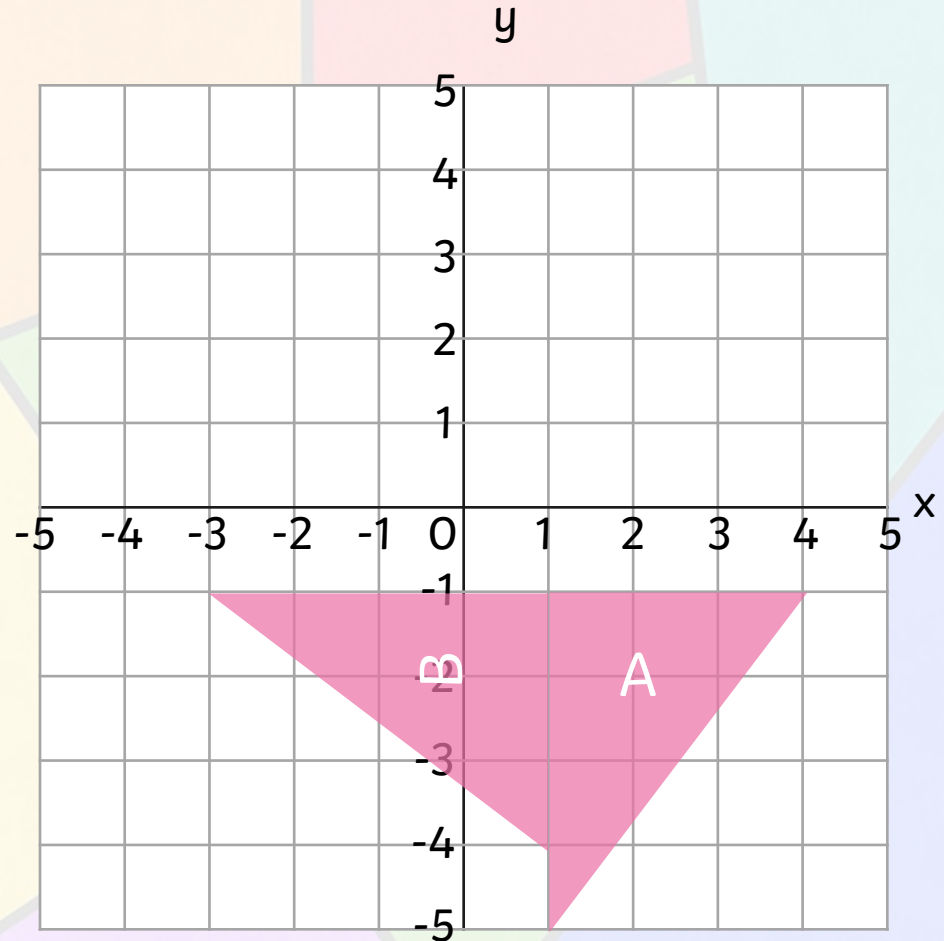


# Translating Shapes

Is this a translation?

**No.**

This is not a translation because the shape has been rotated.



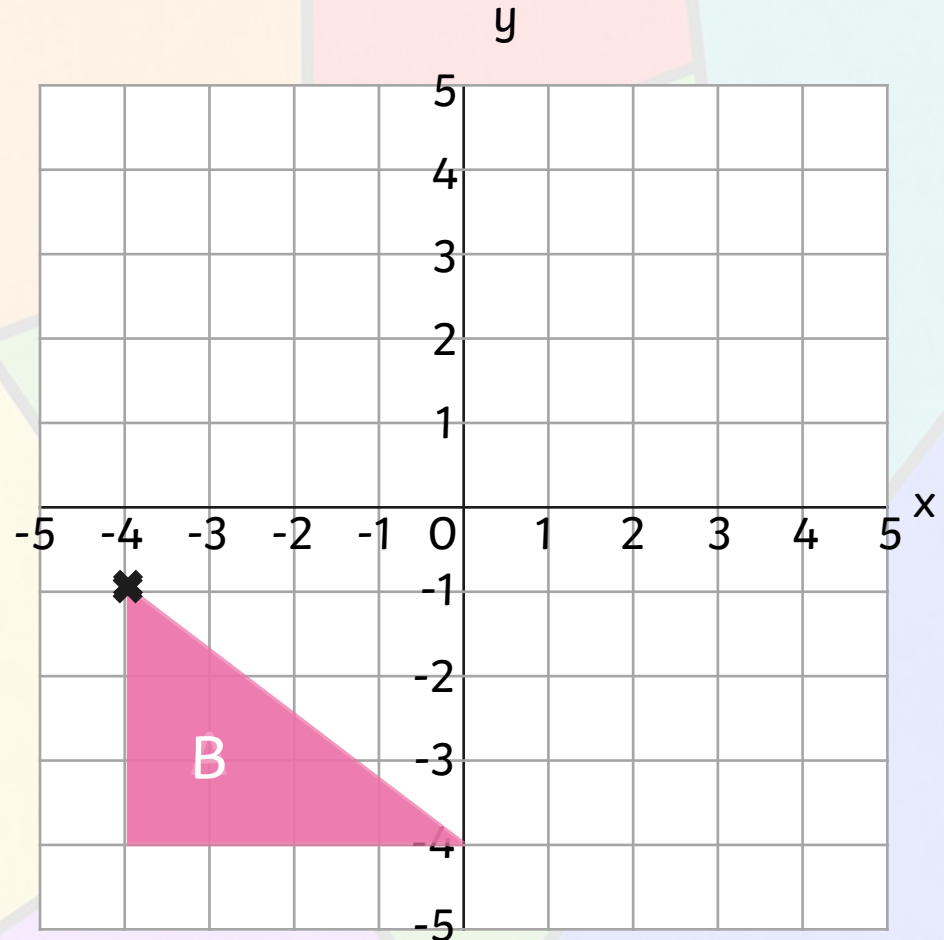
# How Do We Describe a Translation?

To describe a translation, you have to say how many squares it has moved to the left or right, and how many squares it has moved up or down.

The shape has been translated **4 squares to the right**. Then **3 squares up**.

The coordinates of the black point on shape A are  $(-4, -1)$ . What are the coordinates of the black point shown on shape B?

$(0, 2)$



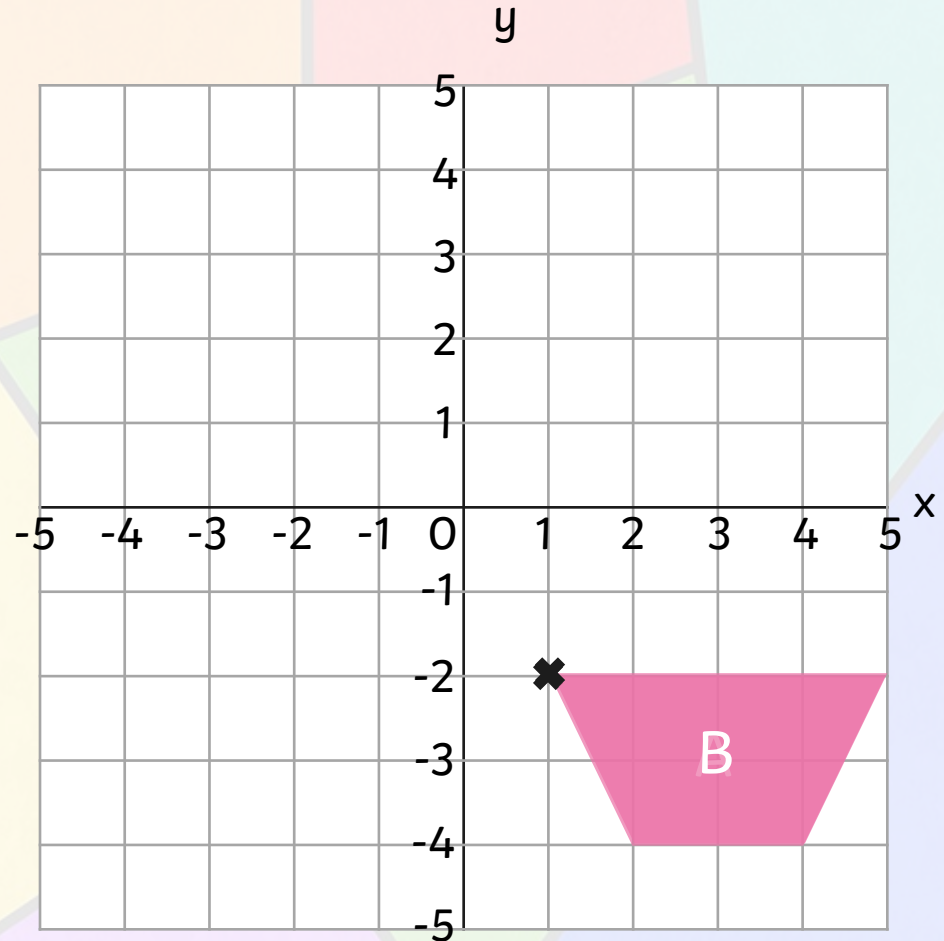


# How Do We Describe a Translation?

The shape has been translated **4 squares to the left** and **5 squares up**.

The coordinates of the black point on shape A are  $(1, -2)$ .  
What are the coordinates of the black point shown on shape B?

$(-3, 3)$



# How Has This Shape Been Translated From A to B?

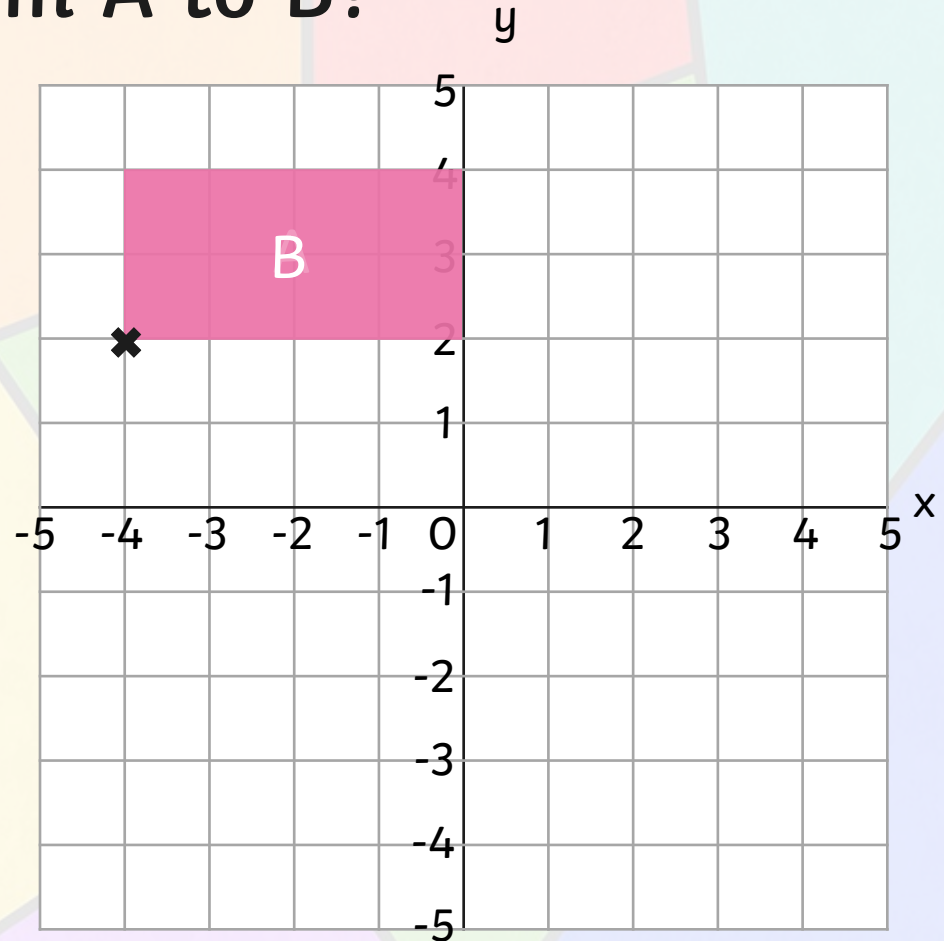
The shape has been translated  
3 squares to the right and  
4 squares down.

Can you work out the  
coordinates of the black point  
on shape A and shape B?

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

Can you work out all the  
coordinates of shape B?

$(-1, -2)$   $(-1, 0)$   $(3, 0)$   $(3, -2)$



# How Has This Shape Been Translated From A to B?

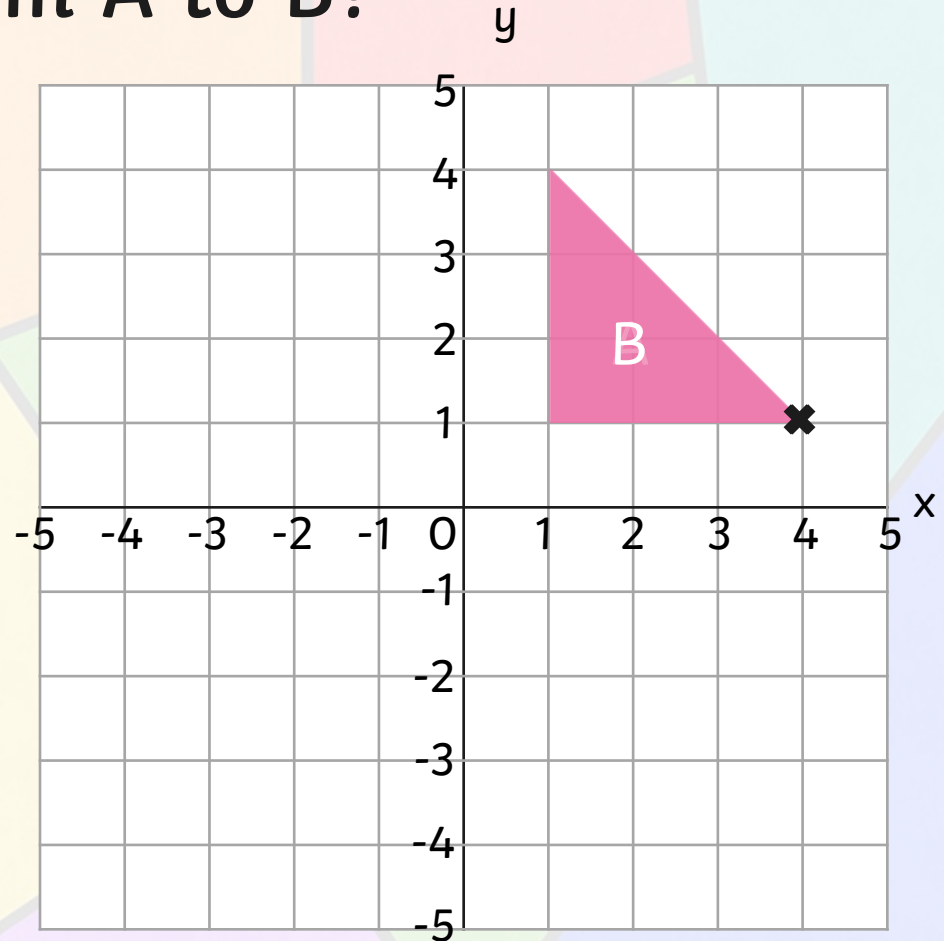
The shape has been translated  
3 squares to the left and  
5 squares down.

Can you work out the  
coordinates of the black point  
on shape A and shape B?

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

Can you work out all the  
coordinates of shape B?

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



# How Has This Shape Been Translated From A to B?

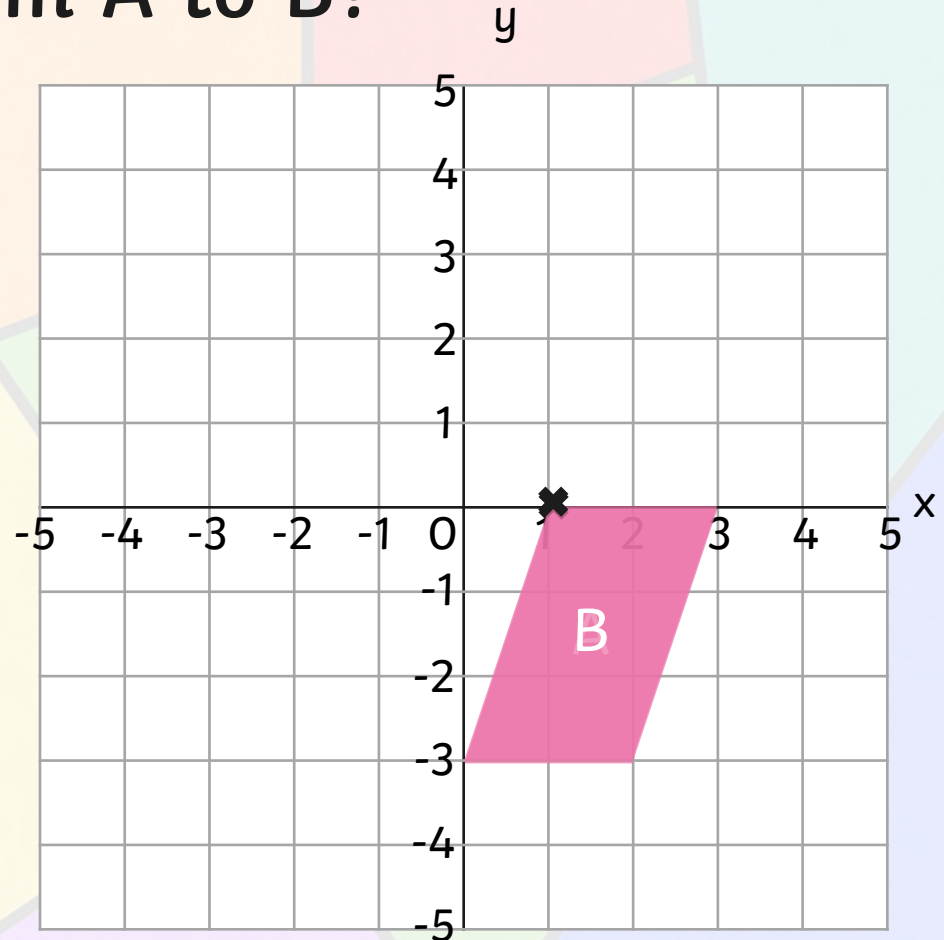
The shape has been translated  
3 squares to the left and  
2 squares up.

Can you work out the  
coordinates of the black point  
on shape A and shape B?

(1,0) (-2,2)

Can you work out all the  
coordinates of shape B?

(-2,2) (0,2) (-1,-1) (-3,-1)





# How Has This Shape Been Translated From A to B?

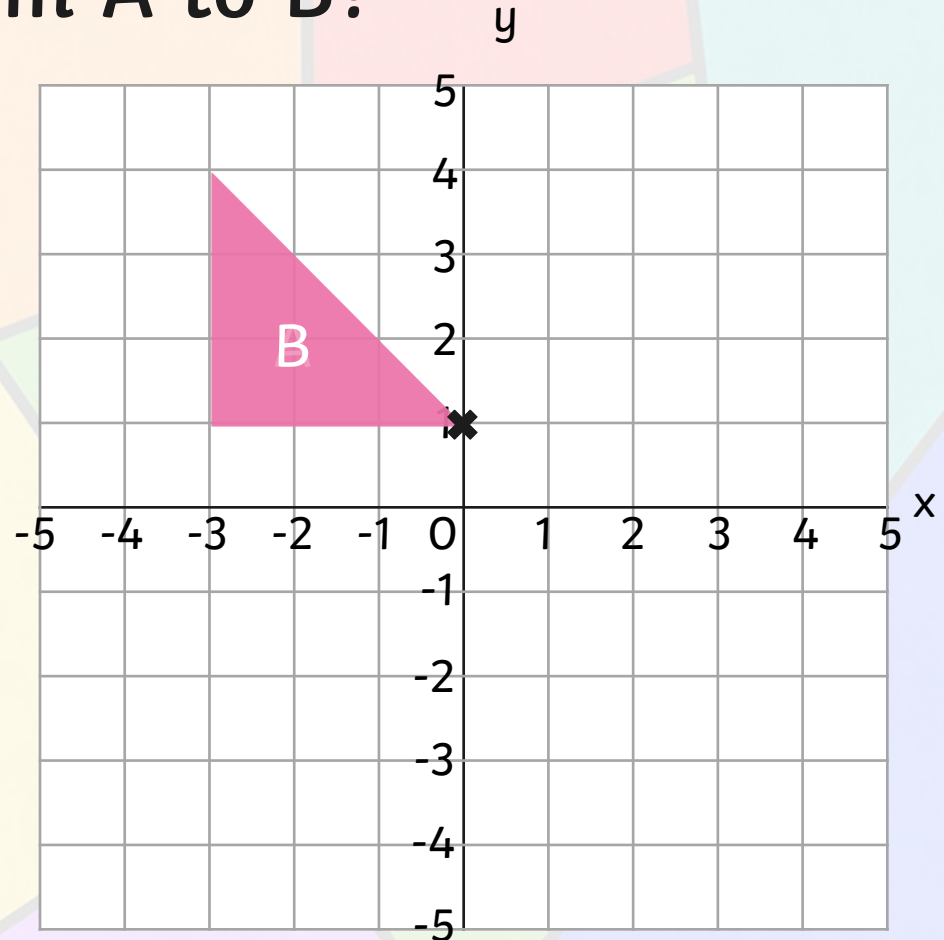
How has this shape been translated?

The shape has been translated 4 squares to the right and 3 squares down.

Can you work out all the coordinates of shape A and shape B?

A (0,1) (-3,1) (-3,4)

B (4,-2) (1,-2) (1,1)



# How Has This Shape Been Translated From A to B?

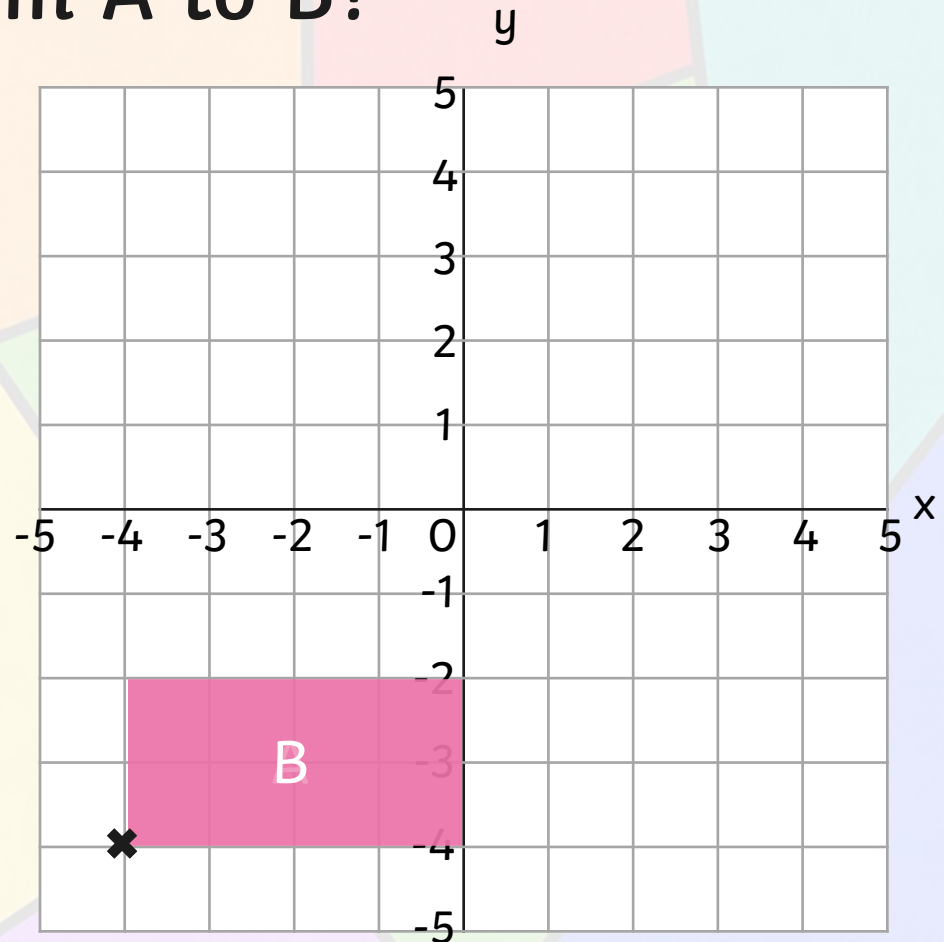
How has this shape been translated?

The shape has been translated 5 squares to the right and 6 squares up.

Can you work out all the coordinates of shape A and shape B?

A: (-4,-4) (-4,-2) (0,-2) (0,-4)

B: (1, 2) (1,4) (5,4) (5,2)



# How Has This Shape Been Translated From A to B?

Shape A has coordinates  
 $(-4, 2)$   $(-4, 4)$   $(0, 4)$   $(0, 2)$

Shape A has been translated  
**3 squares to the right**  
and **2 squares down**.

What are its new coordinates?

$(-1, 0)$   $(-1, 2)$   $(3, 2)$   $(3, 0)$

