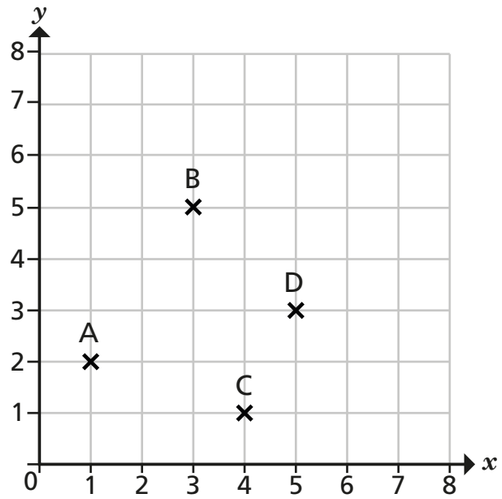
Translation with coordinates

1 Four points have been plotted on a coordinate grid.



a) Translate each point 3 to the right.

b) Complete the table to show the coordinates of each point before and after the translation.

Point	Coordinates before	Coordinates after
A		
B		
C		
D		

What do you notice?

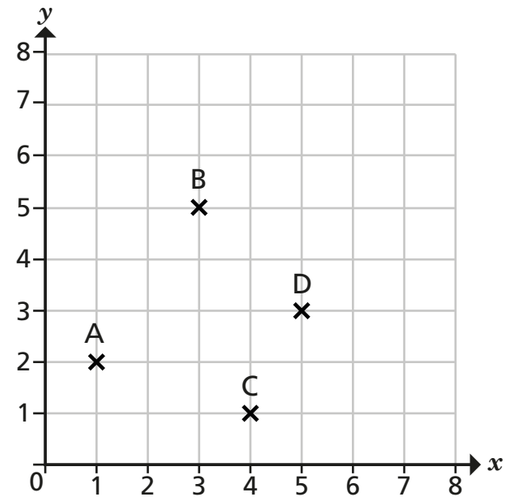
c) Which part of the coordinate stayed the same? _____

d) Which part of the coordinate changed? _____

e) Point E has the coordinates (12, 4). It is translated 3 to the right.

What are the coordinates of the translated point? (☐ , ☐)

2 Four points have been plotted on a coordinate grid.



a) Translate each point 2 up.

b) Complete the table to show the coordinates of each point before and after the translation.

Point	Coordinates before	Coordinates after
A		
B		
C		
D		

What do you notice?

c) What has stayed the same in each coordinate? _____

d) What has changed? _____

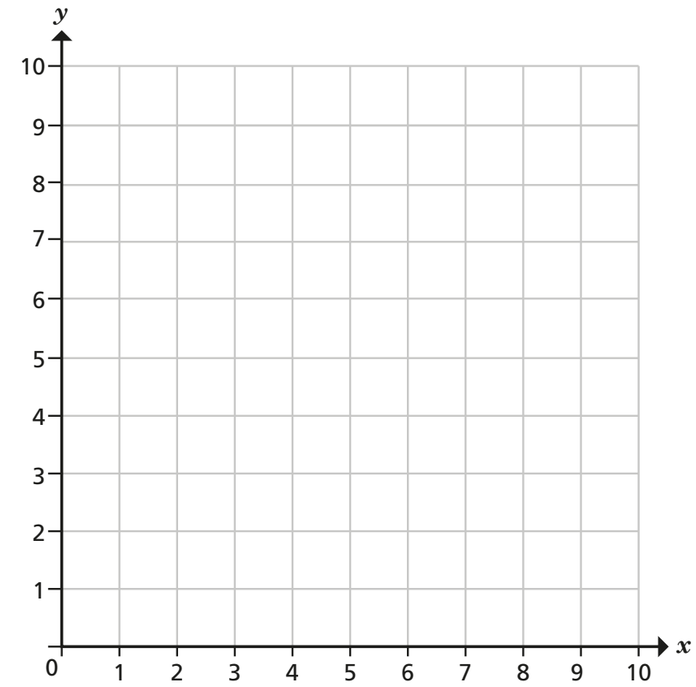
e) Point E has the coordinates (12, 4).

It is translated 2 up.

What are the coordinates of the translated point? (☐ , ☐)

3 Write the coordinates of each point after the given translation.

You can use the coordinate grid to help you.



a) (2, 7) is translated 4 right and 3 down. (☐ , ☐)

b) (9, 2) is translated 8 left and 5 up. (☐ , ☐)

c) (10, 0) is translated 10 left. (☐ , ☐)

d) (0, 4) is translated 6 right and 4 down. (☐ , ☐)

Is it possible to work this out without drawing the points?

4 The coordinates of the vertices of a rectangle are (18, 4), (18, 7), (23, 4) and (23, 7).

The rectangle is translated 10 left and 2 down.

What are the coordinates of the vertices now?

(☐ , ☐) (☐ , ☐) (☐ , ☐) (☐ , ☐)

5 Point M has the coordinates (12, 19).

It is translated 21 right and 9 down.

Alex and Amir are working out the coordinates of the translated points. Here are their answers.

Alex (3, 38) **Amir** (33, 10)

Who do you agree with? _____

Talk about it with a partner.

6 Point X has the coordinates (17, 21).

After being translated, it now has the coordinates (11, 35).

Describe the translation.

_____

7 A pentagon has been translated.

The table shows the coordinates of each vertex before and after the translation. Some of the information is missing.

Before	After
(☐ , 7)	(5, 13)
(2, ☐)	(5, 20)
(11, 7)	(14, ☐)
(☐ , 14)	(14, ☐)
(☐ , ☐)	(10, 25)

a) Complete the table.

b) Describe the translation.

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