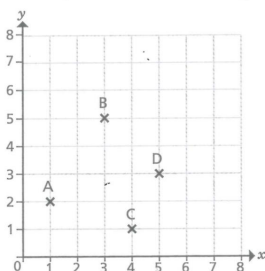


- 1 Four points have been plotted on a coordinate grid.



- a) Translate each point 3 to the right.
b) Complete the table to show the coordinates of each point before and after the translation.

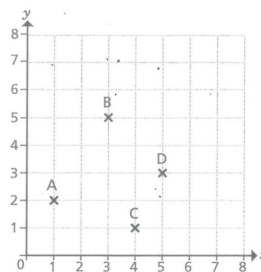
Point	Coordinates before	Coordinates after
A	(1, 2)	(4, 2)
B	(3, 5)	(6, 5)
C	(4, 1)	(7, 1)
D	(5, 3)	(8, 3)

What do you notice?

- c) Which part of the coordinate stayed the same? y -axis
d) Which part of the coordinate changed? x -axis
e) Point E has the coordinates (12, 4). It is translated 3 to the right.

What are the coordinates of the translated point? (15, 4)

Four points have been plotted on a coordinate grid.



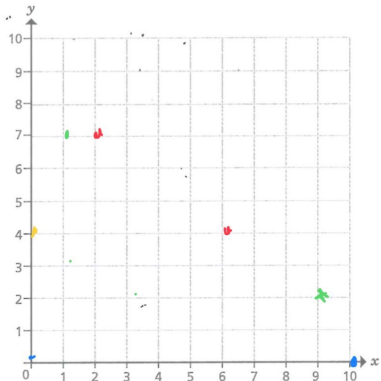
- a) Translate each point 2 up.
b) Complete the table to show the coordinates of each point before and after the translation.

Point	Coordinates before	Coordinates after
A	(1, 2)	(1, 4)
B	(3, 5)	(3, 7)
C	(4, 1)	(4, 3)
D	(5, 3)	(5, 5)

What do you notice?

- c) What has stayed the same in each coordinate? x -axis
d) What has changed? y -axis
e) Point E has the coordinates (12, 4). It is translated 2 up.
What are the coordinates of the translated point? (12, 6)

- 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. (6, 4)
b) (9, 2) is translated 8 left and 5 up. (1, 7)
c) (10, 0) is translated 10 left. (0, 0)
d) (0, 4) is translated 6 right and 4 down. (6, 0)

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

YES BUT IT IS HARDER

- 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?

(8, 2) (8, 5) (15, 2) (15, 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.

6 LEFT + 14 UP

- 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
(2, 7)	(5, 13)
(2, 14)	(5, 20)
(11, 7)	(14, 13)
(11, 14)	(14, 20)
(7, 19)	(10, 25)

- a) Complete the table.

- b) Describe the translation.

RIGHT 3 UP 6