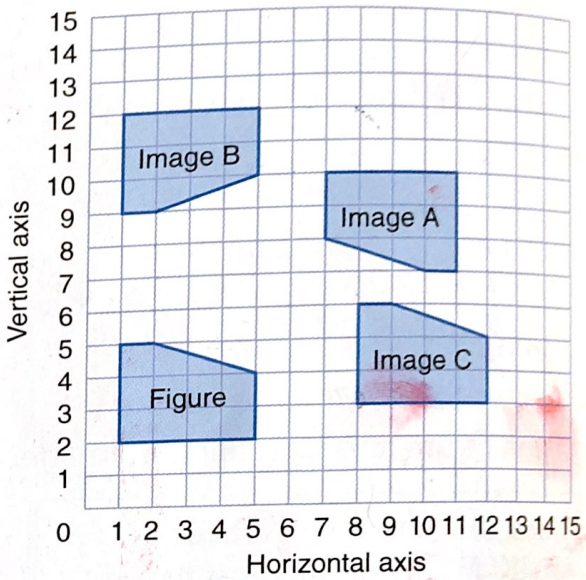
Use tracing paper when it helps.

1. This diagram shows
a figure and its image
after 3 different transformations.
Identify each transformation.
Explain how you know.

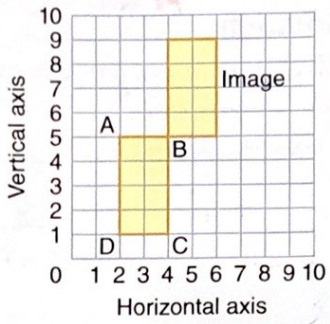


2. Use 1-cm grid paper. Draw a rectangle.

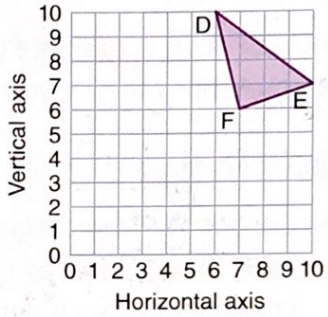
a) Draw a mirror line.
Draw the reflection image of the rectangle in the mirror line.

b) Which different transformation would move
the figure onto the image? Explain.

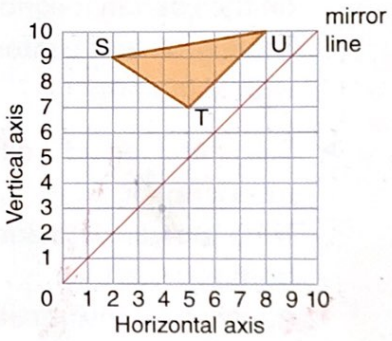
3. Copy the figure and its image onto a coordinate grid.
Describe as many different transformations that would move Figure ABCD onto the image as you can.
For each transformation, label the vertices of the image.



4. a) Find the image of △DEF after the translation 6 squares left and 1 square down.
b) Write the coordinates of the vertices of the figure and the image.
How are the coordinates related?
c) Use your answer to part b to predict the coordinates of the image of point G(10, 2) after the same translation.



5. a) Find the image of △STU after a reflection in the mirror line.
Write the coordinates of the vertices.
b) Predict the location of the image of point V(4, 3) in the same mirror line.
How did you make your prediction?



6. a) Draw a figure on a grid.
Rotate the figure 180° about a point outside the figure.
Can you describe a different transformation whose image would coincide with the rotation image?
b) If your answer to part a is yes, describe the transformation.
If your answer is no, draw a different figure so your answer is yes.

Reflect

When you see a figure and its transformation image on a coordinate grid, how do you identify the transformation? Use examples to explain.

Numbers Every Day

Number Strategies

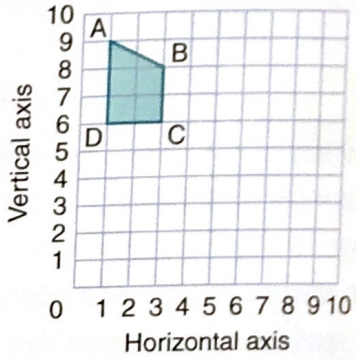
Find the mean of the numbers in each set.

- 210, 332, 511, 205
- 76, 88, 34, 28, 77
- 7601, 6620, 1774, 3232

Assessment Focus | Question 3

Practice

You will need grid paper and tracing paper.

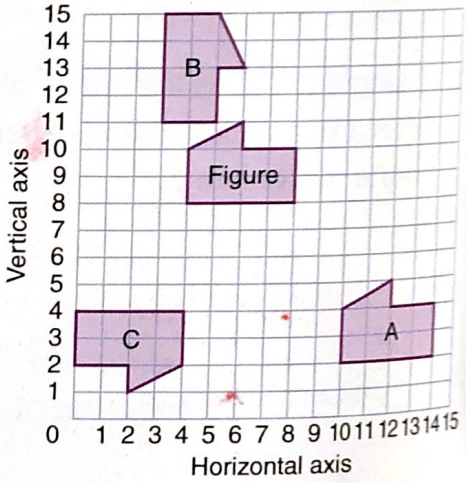


1. Copy the figure onto a coordinate grid.
Translate the figure 3 squares right.
Then rotate the translation image
90° clockwise about (5, 5).
What are the coordinates of the final image?

2. The coordinates of my vertices are:
A(1, 4) B(1, 9) C(3, 4) D(3, 9)
I am rotated 90° clockwise about (3, 4).
Then, I am rotated 90° clockwise about (7, 2).
Finally, I am translated 5 squares left.
What are the coordinates of my final image?

3. Describe a pair of transformations that moves the figure onto each image.
Can you find more than one pair of transformations for each image? Explain.

a) Image A
b) Image B
c) Image C

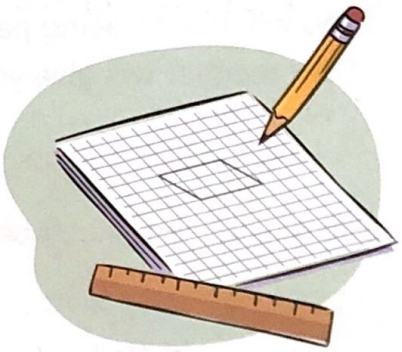


4. Draw an irregular quadrilateral on grid paper.

a) Choose two transformations.
Apply the first transformation to the quadrilateral.
Then apply the second transformation to the image.

b) Use a different colour.
Apply the transformations from part a in the reverse order.

c) Compare the final images from parts a and b.
Does the order in which transformations are applied matter? Explain.



5. I am an octagon.

The coordinates of my vertices are:

P(7, 3)	Q(6, 4)	R(6, 5)	S(7, 6)
T(8, 6)	U(9, 5)	V(9, 4)	W(8, 3)

I am translated 5 squares left and 3 squares up.
Then, I am reflected in a line through (0, 5) and (10, 5).
Next, I am translated 2 squares right and 2 squares up.

a) Write the coordinates of my final image.

b) What do you notice about my final image and me?

Reflect

Suppose you know the location of a figure and its final image after 2 transformations.
How can you identify the transformations?
Use examples to explain.

Numbers Every Day

Mental Math

Find two 2-digit numbers with a product of 360.
How many different pairs can you find?

Assessment Focus | Question 4