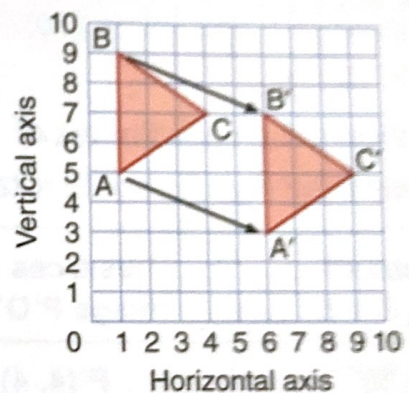# Translation

After a translation, a figure and its image:
- are congruent
- face the same way

Figure ABC was translated
5 squares right and 2 squares down.

The table shows the coordinates of the
vertices of the figure and its translation image.

Vertices of Figure ABC	Vertices of Image A′B′C′
A(1, 5)	A′(6, 3)
B(1, 9)	B′(6, 7)
C(4, 7)	C′(9, 5)

Point A′ is the image
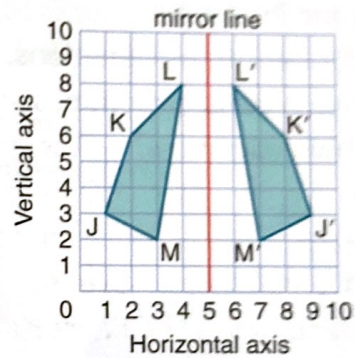of point A.
We write: A′
We say: "A prime"

Reflection

After a reflection, a figure and its image:

- are congruent
- face opposite ways

Figure JKLM was reflected in a vertical mirror line through the horizontal axis at 5.

The table shows the coordinates of the vertices of the figure and its reflection image.

Vertices of Figure JKLM	Vertices of Image J'K'L'M'
J(1, 3)	J'(9, 3)
K(2, 6)	K'(8, 6)
L(4, 8)	L'(6, 8)
M(3, 2)	M'(7, 2)

Any point and its reflection image are the same distance from the mirror line.
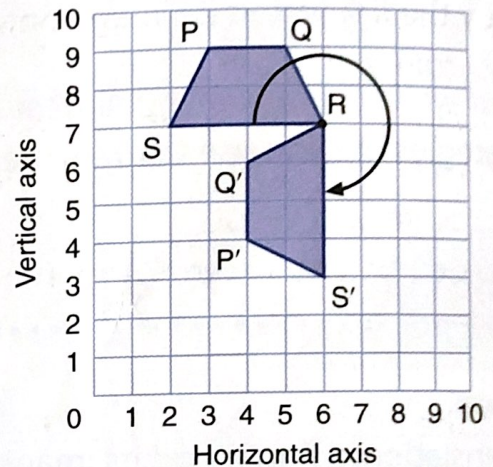
Rotation

After a rotation, a figure and its image:

- are congruent
- may face different ways

Figure PQRS was rotated
a $\frac{3}{4}$ turn clockwise about R.

> After a $\frac{3}{4}$ turn clockwise, the reflex angle between RS and RS′ is 270°.

The table shows the coordinates of
the vertices of the figure and its rotation image.

Vertices of Figure PQRS	Vertices of Image P′Q′RS′
P(3, 9)	P′(4, 4)
Q(5, 9)	Q′(4, 6)
R(6, 7)	R(6, 7)
S(2, 7)	S′(6, 3)

Since R is a vertex on the figure and its image, we do not label the image vertex R′.