

GCSE MATHS • GRADE 3

MATHS



MODEL ANSWERS

REFLECTIONS

SCORE

/92

PERCENTAGE

%

STEM UP

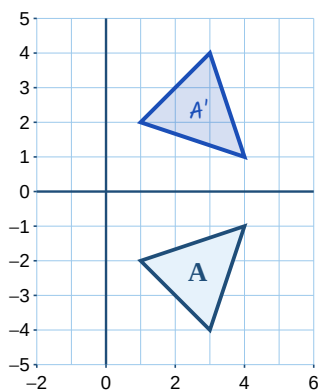
- 1 The point P has coordinates $(-4, -1)$.
P is reflected in the x-axis.
Write down the coordinates of the image of P.

*Find the distance from P to the mirror line and
go the same distance the other side*

$(-4, 1)$

/ 1

- 2 Reflect shape A in the x-axis.



/ 1

- 3 Triangle ABC has vertices $A(-3, 1)$, $B(-4, -2)$, $C(-6, 0)$.
It is reflected in $x = 3$.
Write down the coordinates of A' , B' and C' .

Reflect each vertex in turn

$A'(9, 1)$, $B'(10, -2)$, $C'(12, 0)$

/ 1

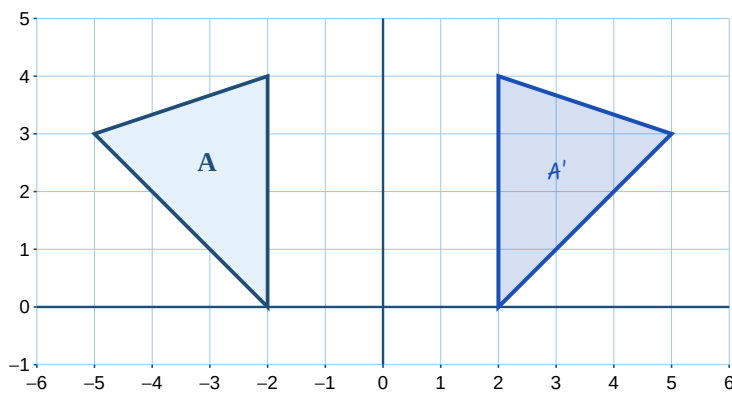
- 4 The point P has coordinates $(6, -6)$.
 P is reflected in $y = 4$.
 Write down the coordinates of the image of P.

*Find the distance from P to the mirror line and
 go the same distance the other side*

$(6, 14)$

/ 1

- 5 Reflect shape A in the y-axis.



/ 1

- 6 Triangle ABC has vertices $A(1, 1)$, $B(1, -3)$, $C(-2, 0)$.
 It is reflected in the y-axis.
 Write down the coordinates of A' , B' and C' .

Reflect each vertex in turn

$A'(-1, 1)$, $B'(-1, -3)$, $C'(2, 0)$

/ 1

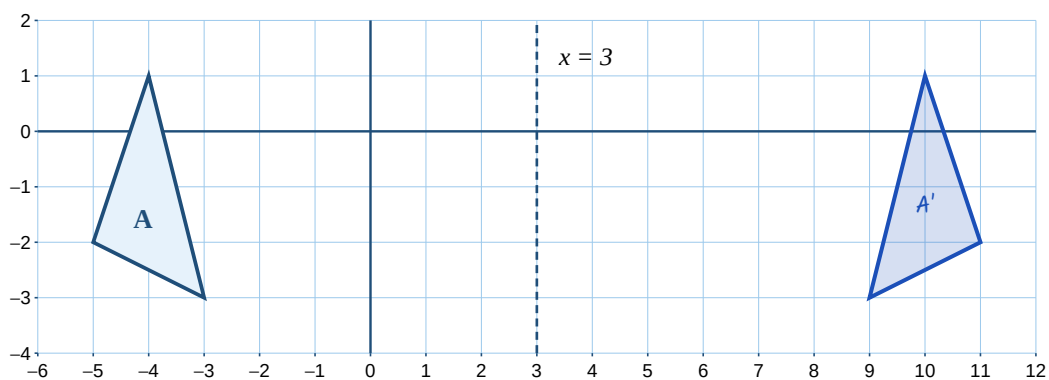
- 7 The point P has coordinates $(-1, 1)$.
 P is reflected in $x = 3$.
 Write down the coordinates of the image of P.

*Find the distance from P to the mirror line and
 go the same distance the other side*

$(7, 1)$

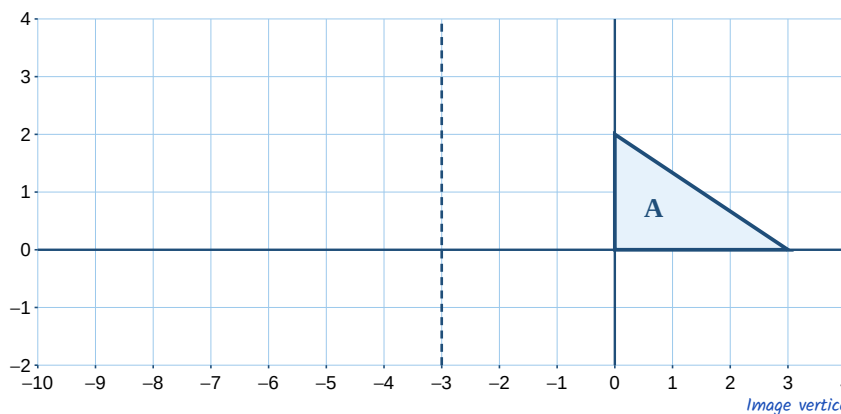
/ 1

- 8 Reflect shape A in $x = 3$.



/ 1

- 9 On the grid, reflect shape A in the mirror line.



*Each vertex is
 the same
 distance from
 the mirror line
 as its image,
 on the other
 side*

Image vertices: $(-6, 2)$, $(-6, 0)$, $(-9, 0)$

/ 1

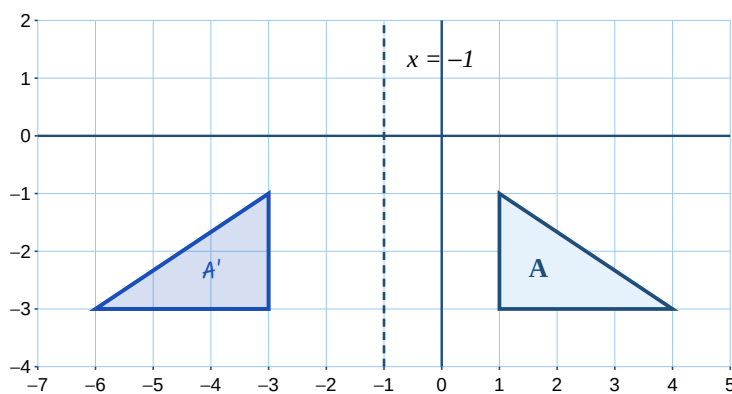
- 10** The point P has coordinates $(-5, 6)$.
 P is reflected in $y = -2$.
 Write down the coordinates of the image of P.

*Find the distance from P to the mirror line and
 go the same distance the other side*

$(-5, -10)$

/ 1

- 11** Reflect shape A in $x = -1$.



/ 1

- 12** Triangle ABC has vertices $A(5, -5)$, $B(2, -4)$, $C(4, -2)$.
 It is reflected in $y = 4$.
 Write down the coordinates of A' , B' and C' .

Reflect each vertex in turn

$A'(5, 13)$, $B'(2, 12)$, $C'(4, 10)$

/ 1

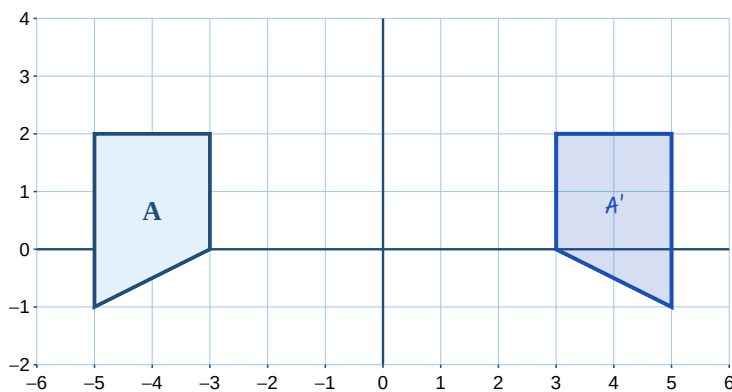
- 13 The point P has coordinates $(6, -1)$.
 P is reflected in $y = -2$.
 Write down the coordinates of the image of P.

*Find the distance from P to the mirror line and
 go the same distance the other side*

$(6, -3)$

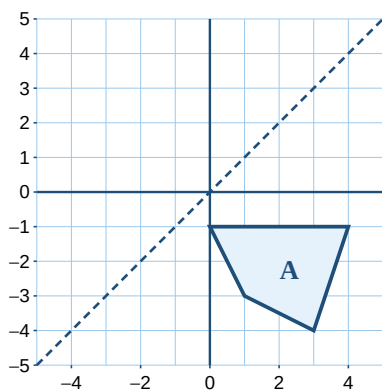
/ 1

- 14 Reflect shape A in the y-axis.



/ 1

- 15 On the grid, reflect shape A in the mirror line.



*Each vertex is the same distance from the
 mirror line as its image, on the other side*

Image vertices: $(-1, 4)$, $(-1, 0)$,
 $(-3, 1)$, $(-4, 3)$

/ 1

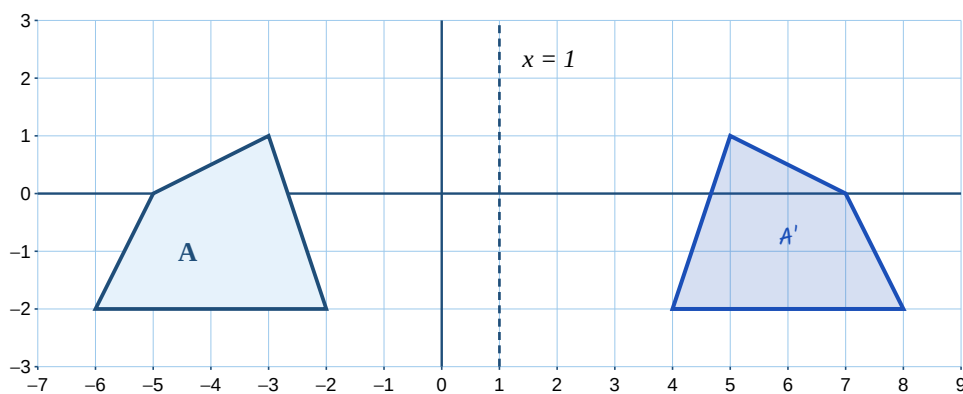
- 16** The point P has coordinates $(-2, 0)$.
 P is reflected in $y = 3$.
 Write down the coordinates of the image of P.

*Find the distance from P to the mirror line and
 go the same distance the other side*

$(-2, 6)$

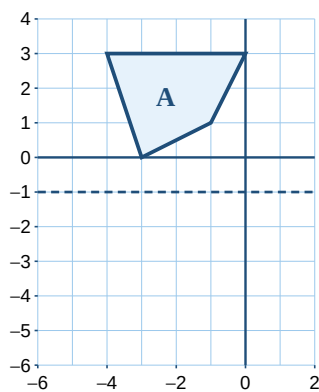
/ 1

- 17** Reflect shape A in $x = 1$.



/ 1

- 18** On the grid, reflect shape A in the mirror line.

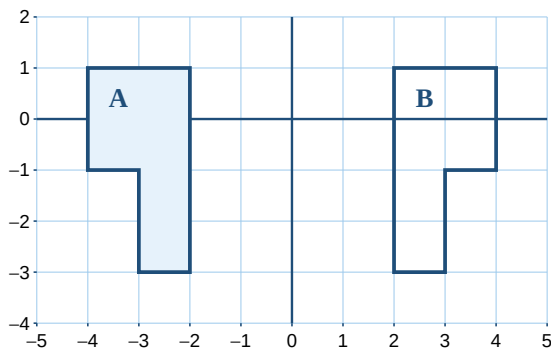


*Each vertex is the same distance from the mirror
 line as its image, on the other side*

Image vertices: $(-4, -5)$, $(0, -5)$, $(-1, -3)$, $(-2, -2)$

/ 1

- 19 Shape A is mapped onto shape B by a reflection.
Write down the equation of the mirror line.

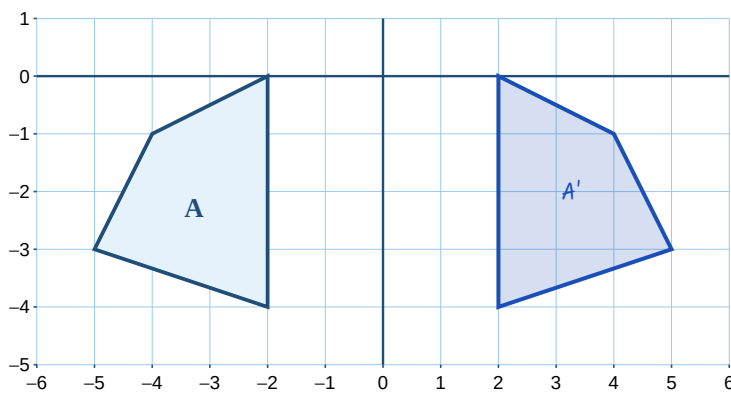


The mirror line is halfway between matching points

$x = 0$

/ 1

- 20 Reflect shape A in the y-axis.



/ 1

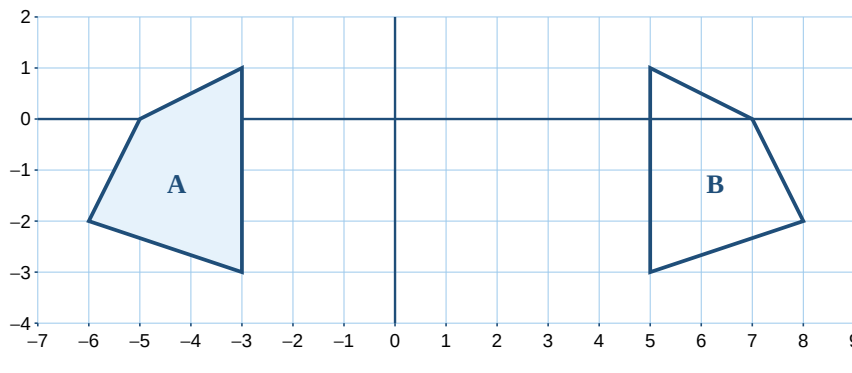
- 21 The point $P(2, 5)$ is reflected to the point $P'(-4, 5)$.
Write down the equation of the mirror line.

The mirror line passes halfway between P and P'

$x = -1$

/ 2

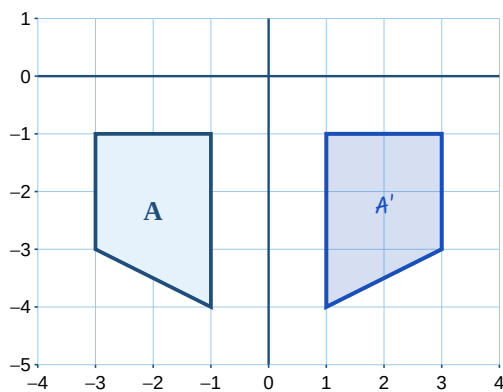
- 22 Shape A is mapped onto shape B by a reflection.
Write down the equation of the mirror line.



The mirror line is halfway between matching points

/ 2

- 23 Reflect shape A in the y-axis.



/ 2

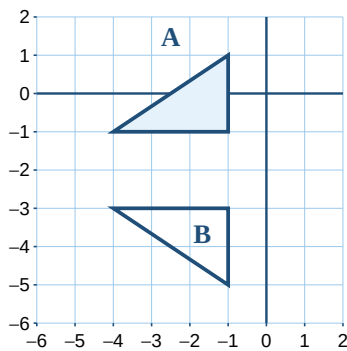
- 24 The point $P(-1, 2)$ is reflected to the point $P'(-1, 4)$.
Write down the equation of the mirror line.

The mirror line passes halfway between P and P'

$y = 3$

/ 2

- 25 Shape A is mapped onto shape B by a reflection.
Write down the equation of the mirror line.

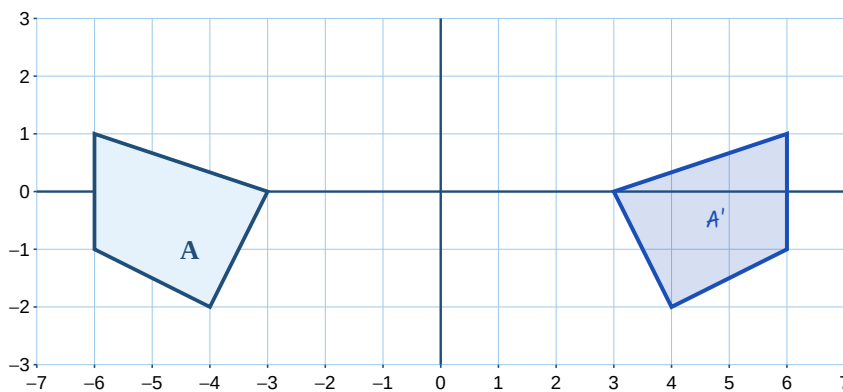


The mirror line is halfway between matching points

$y = -2$

2 / 2

- 26 Reflect shape A in the y-axis.



2 / 2

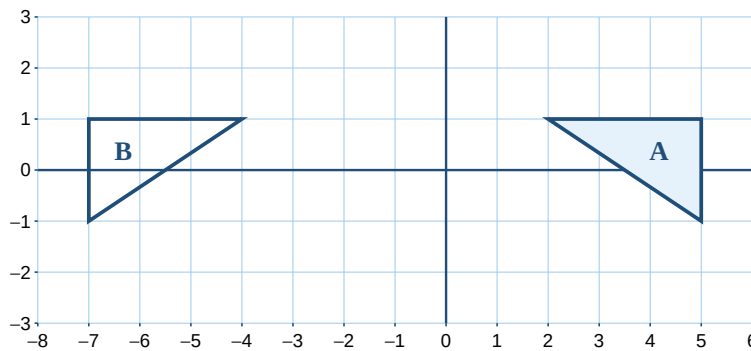
- 27 The point $P(-4, 1)$ is reflected to the point $P'(-4, 5)$.
Write down the equation of the mirror line.

The mirror line passes halfway between P and P'

$y = 3$

2 / 2

- 28 Shape A is mapped onto shape B by a reflection.
Write down the equation of the mirror line.

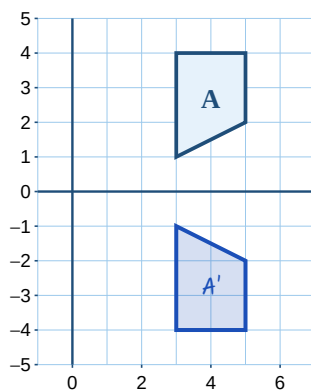


The mirror line is halfway between matching points

$x = -1$

/ 2

- 29 Reflect shape A in the x-axis.



/ 2

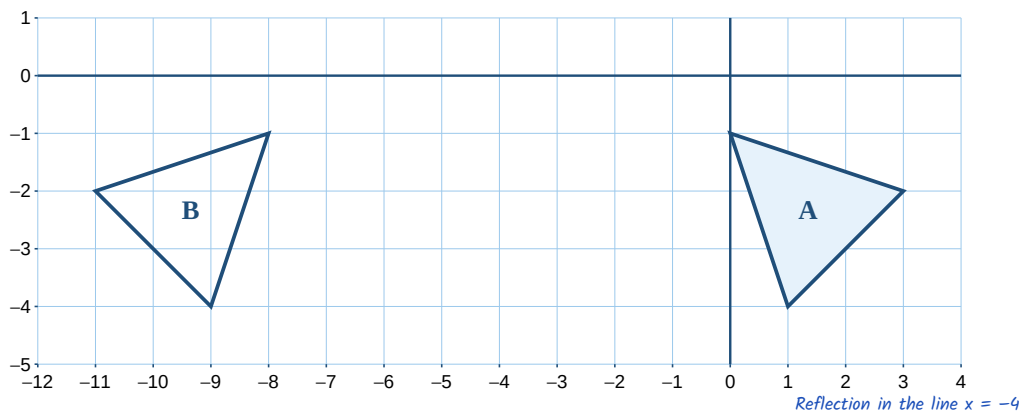
- 30 The point $P(-4, 2)$ is reflected to the point $P'(10, 2)$.
Write down the equation of the mirror line.

The mirror line passes halfway between P and P'

$x = 3$

/ 2

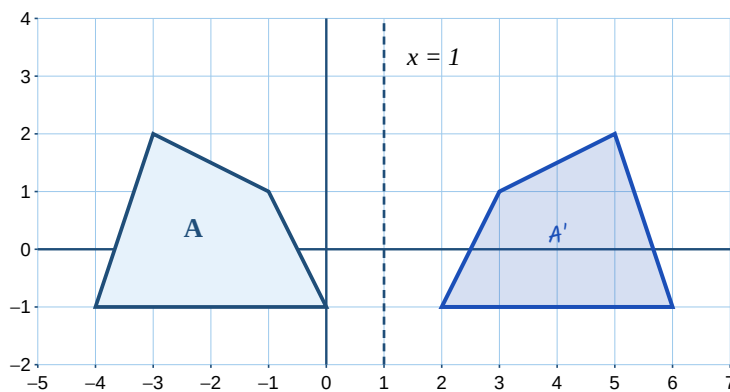
- 31 Describe fully the single transformation that maps shape A onto shape B.



The mirror line is halfway between matching points

2 / 2

- 32 Reflect shape A in $x = 1$.



2 / 2

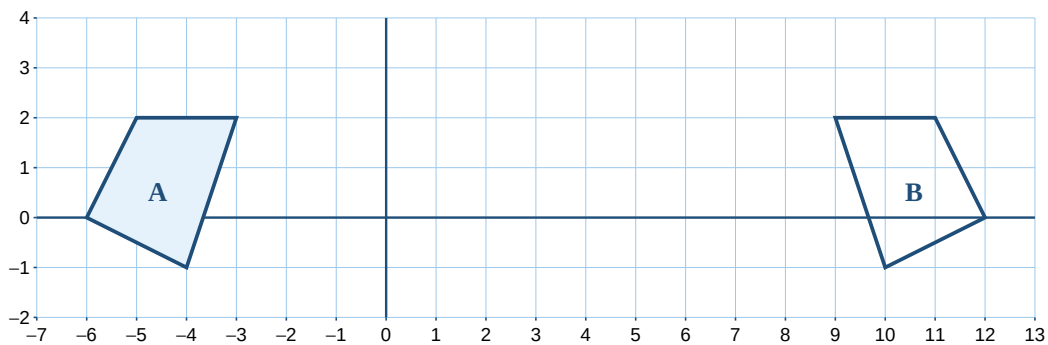
- 33 Triangle ABC has vertices $A(0, 4)$, $B(0, 1)$, $C(2, 4)$.
It is reflected in $y = x$.
Write down the coordinates of A' , B' and C' .

Reflect each vertex in turn

$A'(4, 0)$, $B'(1, 0)$, $C'(4, 2)$

2 / 2

- 34 Describe fully the single transformation that maps shape A onto shape B.

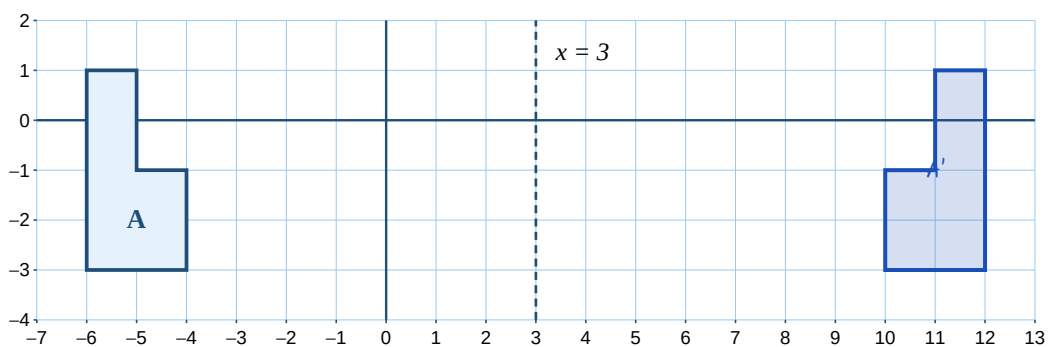


The mirror line is halfway between matching points

Reflection in the line $x = 3$

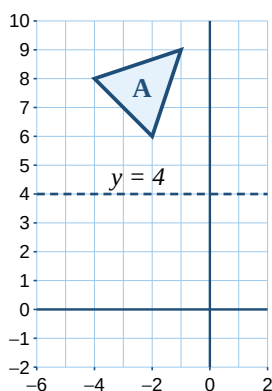
/ 2

- 35 Reflect shape A in $x = 3$.



/ 2

- 36 Reflect shape A in the line $y = 4$.

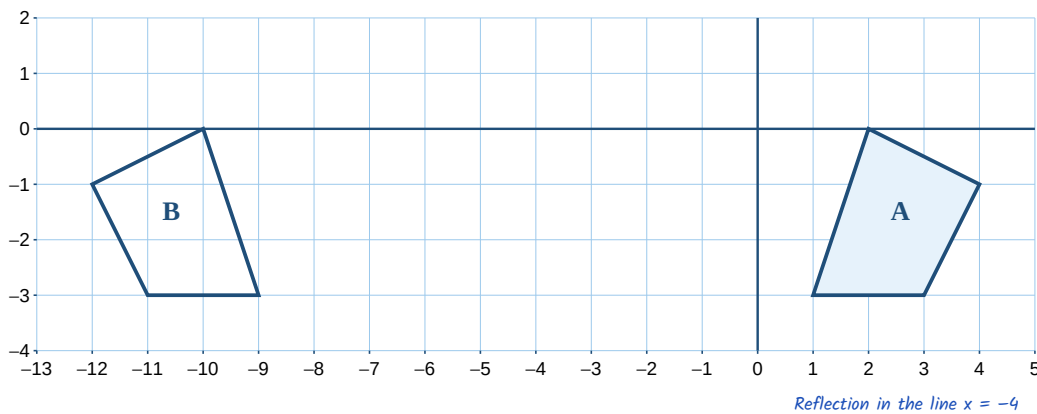


Each vertex is the same distance from the line $y = 4$ as its image, on the other side

Image vertices: $(-1, -1)$, $(-2, 2)$, $(-4, 0)$

/ 2

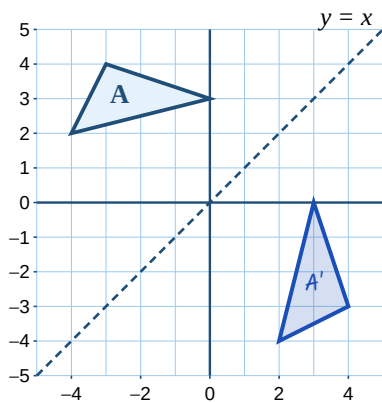
- 37 Describe fully the single transformation that maps shape A onto shape B.



The mirror line is halfway between matching points

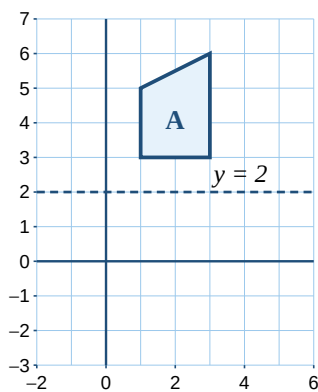
2 / 2

- 38 Reflect shape A in $y = x$.



2 / 2

- 39 Reflect shape A in the line $y = 2$.

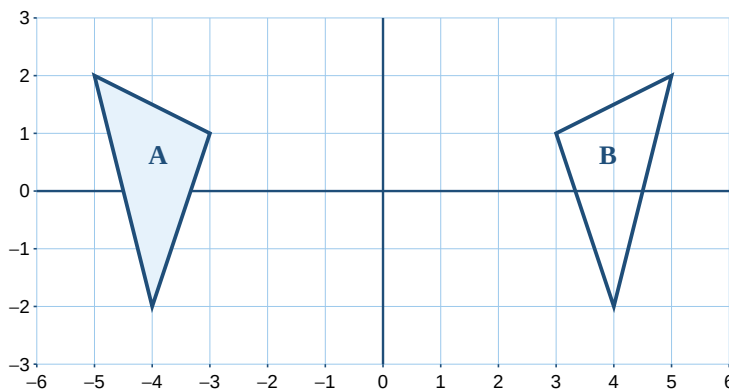


Each vertex is the same distance from the line $y = 2$ as its image, on the other side

Image vertices: $(3, -2)$, $(3, 1)$,
 $(1, 1)$, $(1, -1)$

3 / 3

- 40 Describe fully the single transformation that maps shape A onto shape B.

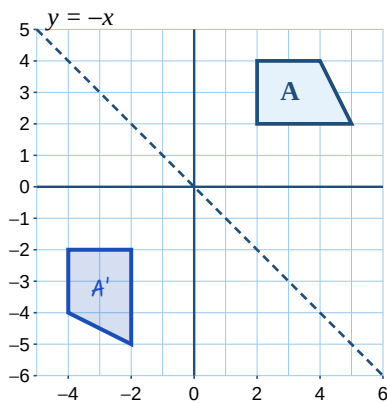


The mirror line is halfway between matching points

Reflection in the line $x = 0$

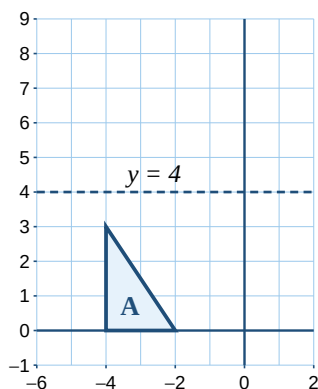
3 / 3

- 41 Reflect shape A in $y = -x$.



3 / 3

- 42 Reflect shape A in the line $y = 4$.



Each vertex is the same distance from the line $y = 4$ as its image, on the other side

Image vertices: $(-4, 8)$, $(-4, 5)$, $(-2, 8)$

3 / 3

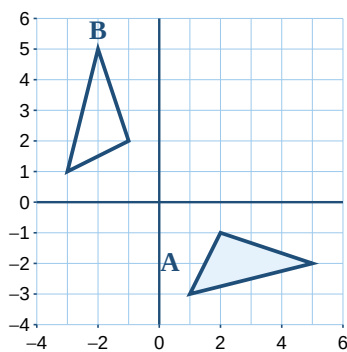
- 43 The point $P(2, 6)$ is reflected to the point $P'(6, 2)$.
Write down the equation of the mirror line.

The mirror line passes halfway between P and P'

$y = x$

3 / 3

- 44 Shape A is mapped onto shape B by a reflection.
Write down the equation of the mirror line.

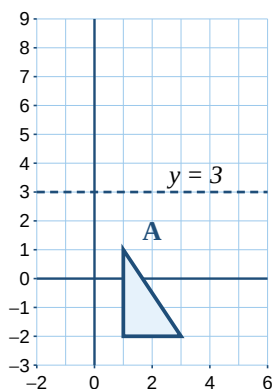


The mirror line is halfway between matching points

$y = x$

3 / 3

- 45 Reflect shape A in the line $y = 3$.



Each vertex is the same distance from the line $y = 3$ as its image, on the other side

*Image vertices: $(3, 8)$, $(1, 8)$,
 $(1, 5)$*

3 / 3

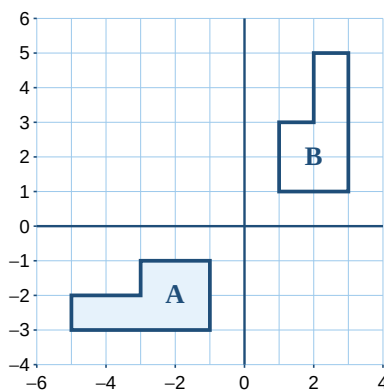
- 46 The point $P(3, -4)$ is reflected to the point $P'(4, -3)$.
Write down the equation of the mirror line.

The mirror line passes halfway between P and P'

$$y = -x$$

3 / 3

- 47 Describe fully the single transformation that maps shape A onto shape B.

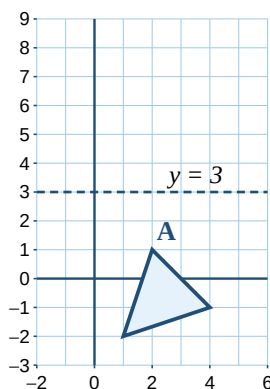


The mirror line is halfway between matching points

Reflection in the line $y = -x$

3 / 3

- 48 Reflect shape A in the line $y = 3$.

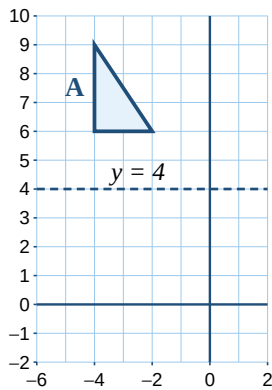


Each vertex is the same distance from the line $y = 3$ as its image, on the other side

Image vertices: $(1, 8)$, $(4, 7)$, $(2, 5)$

3 / 3

- 49 Reflect shape A in the line $y = 4$.

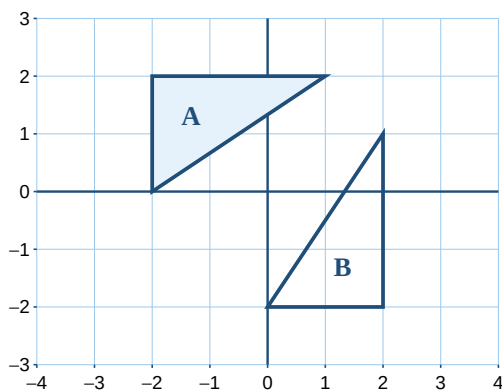


Each vertex is the same distance from the line $y = 4$ as its image, on the other side

Image vertices: $(-2, 2)$, $(-4, 2)$, $(-4, -1)$

/ 3

- 50 Describe fully the single transformation that maps shape A onto shape B.



The mirror line is halfway between matching points

Reflection in the line $y = x$

/ 3