

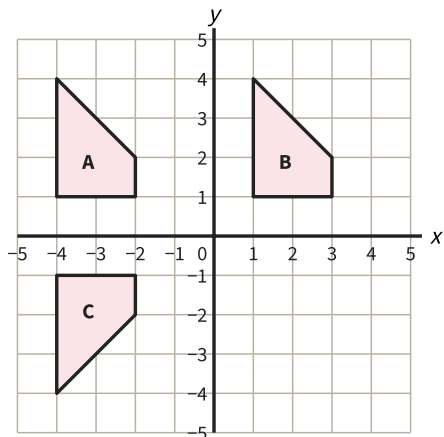
Transformations

ANSWERS

Ruler and tracing paper | 30 minutes | Total marks: 32

Name Class

1



- (a) Write down the name of the transformation that maps shape A onto shape B.

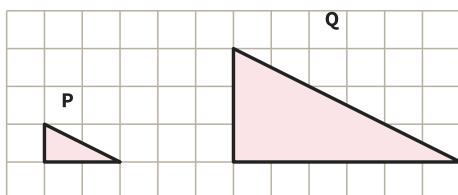
Answer Translation (1) [1 mark]

- (b) Write down the name of the transformation that maps shape A onto shape C.

Answer Reflection (1) [1 mark]

2

Triangle Q is an enlargement of triangle P.

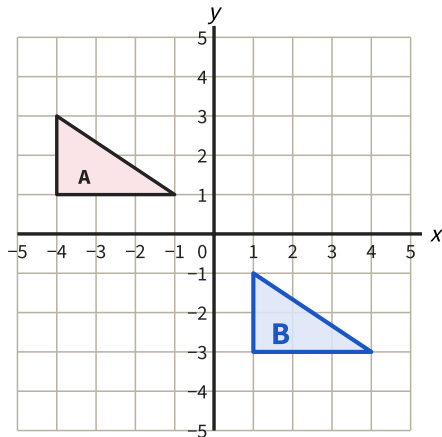


Write down the scale factor of the enlargement.

Answer 3 (1) [1 mark]

3

(a)

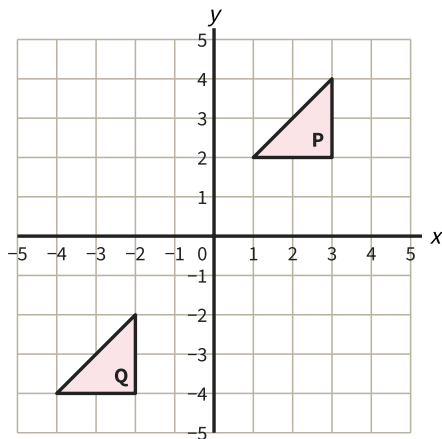


Translate triangle A by the vector $\begin{pmatrix} 5 \\ -4 \end{pmatrix}$
Label the new triangle B.

[2 marks]

5 right (1) 4 down (1)

(b)



Write down the column vector of the translation that maps triangle P onto triangle Q.

Answer $\begin{pmatrix} -5 \\ -6 \end{pmatrix}$ (1) [1 mark]

(c)

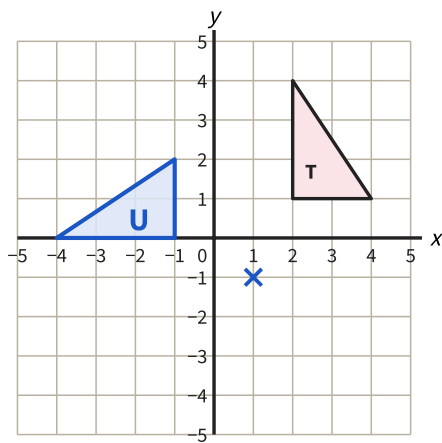
A shape is translated by the vector $\begin{pmatrix} 4 \\ -1 \end{pmatrix}$ and then by the vector $\begin{pmatrix} -6 \\ 3 \end{pmatrix}$
Write down the single column vector that has the same effect.

Answer $\begin{pmatrix} -2 \\ 2 \end{pmatrix}$ (1) [1 mark]

4

You may use tracing paper.

(a)



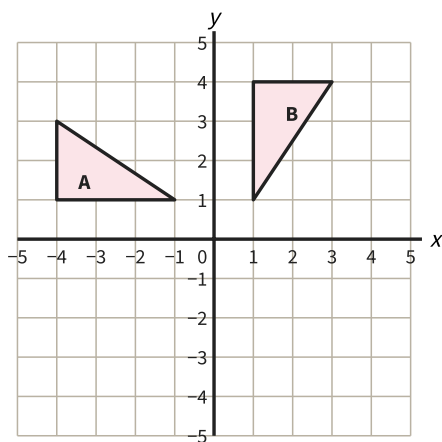
Rotate triangle T 90° anticlockwise about the point $(1, -1)$

Label the new triangle U.

[2 marks]

Turned 90° anticlockwise (1) Correct position (1)

(b)



Describe fully the single transformation that maps triangle A onto triangle B.

Rotation (1)

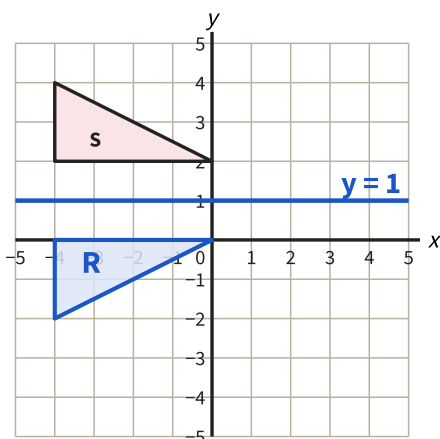
90° clockwise (1)

about $(0, 0)$ (1)

[3 marks]

5

(a)



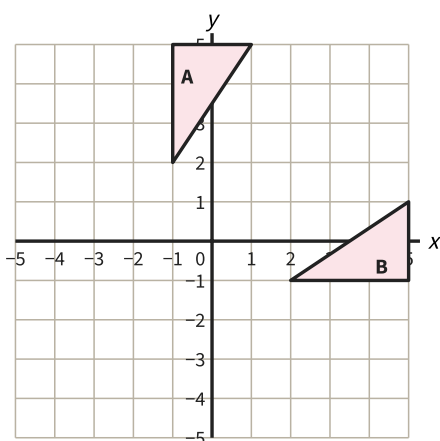
Reflect triangle S in the line $y = 1$

Label the new triangle R.

[2 marks]

2 corners correct (1) All correct (1)

(b)



Describe fully the single transformation that maps triangle A onto triangle B.

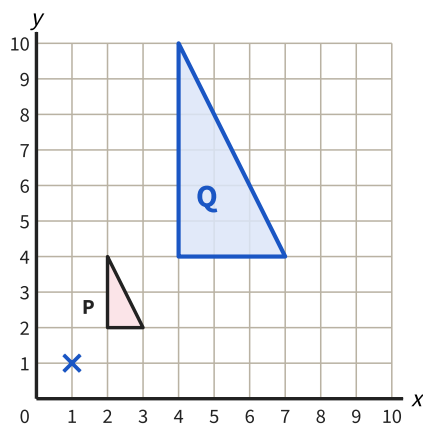
Reflection (1)

in the line $y = x$ (1)

[2 marks]

6

(a)

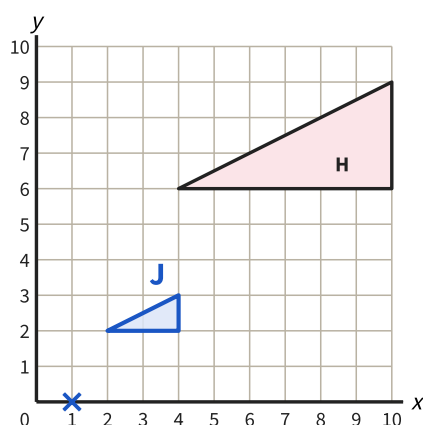


Enlarge triangle P by scale factor 3, centre (1, 1)
Label the new triangle Q.

[2 marks]

Sides 3 times as long (1) Correct position (1)

(b)

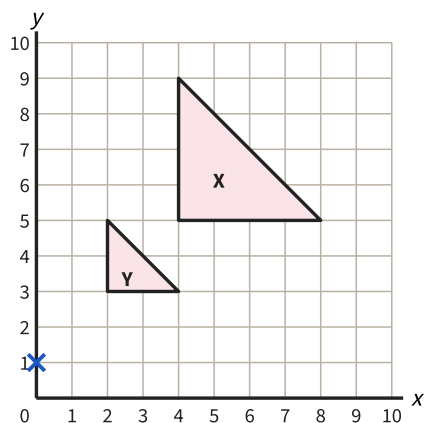


Enlarge triangle H by scale factor $\frac{1}{3}$, centre (1, 0)
Label the new triangle J.

[2 marks]

Sides a third as long (1) Correct position (1)

7



Describe fully the single transformation that maps triangle X onto triangle Y.

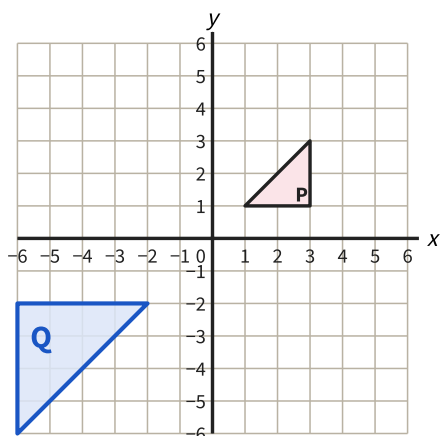
Enlargement (1)

scale factor $\frac{1}{2}$ (1)

centre (0, 1) (1)

[3 marks]

8

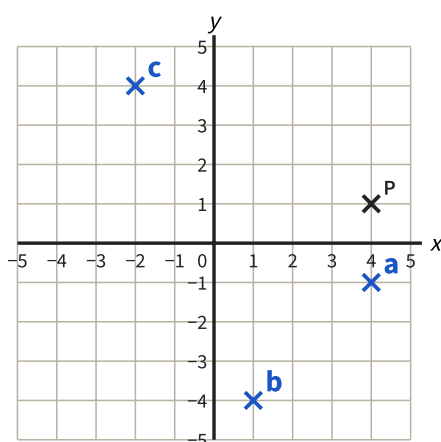


Enlarge triangle P by scale factor -2 , centre $(0, 0)$
Label the new triangle Q.

[2 marks]

2 corners correct (1) All correct (1)

9



The point P is marked on the grid.

Write down where P ends up after each transformation.

(a) P is reflected in the x-axis.

Answer (4, -1) (1) [1 mark]

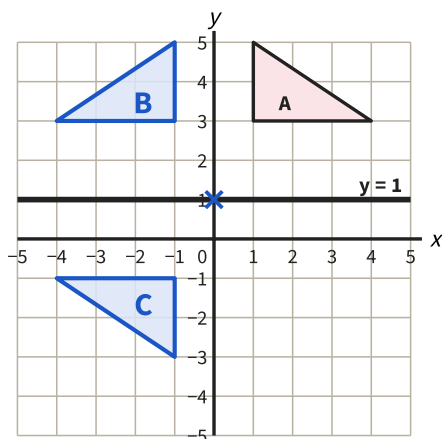
(b) P is rotated 90° clockwise about $(0, 0)$

Answer (1, -4) (1) [1 mark]

(c) P is translated by the vector $\begin{pmatrix} -6 \\ 3 \end{pmatrix}$

Answer (-2, 4) (1) [1 mark]

10



The line $y = 1$ is drawn on the grid. You may use tracing paper.

- (a) Reflect triangle A in the y -axis.
Label the new triangle B.

Correct reflection (1)

[1 mark]

- (b) Reflect triangle B in the line $y = 1$.
Label the new triangle C.

Correct reflection (1)

[1 mark]

- (c) Describe fully the single transformation that maps triangle A onto triangle C.

Rotation 180° (1)

about $(0, 1)$ (1)

[2 marks]

Question	Topic	RAG
1	I can recognise a translation and a reflection	
2	I can find the scale factor of an enlargement	
3	I can translate by a vector, describe a translation and add vectors	
4	I can rotate a shape about a point and describe a rotation	
5	I can reflect a shape in a line and describe a reflection	
6	I can enlarge a shape by a whole number or a fractional scale factor	
7	I can describe an enlargement fully	
8	I can enlarge a shape by a negative scale factor	
9	I can carry out a mix of transformations	
10	I can combine two transformations and describe them as one	