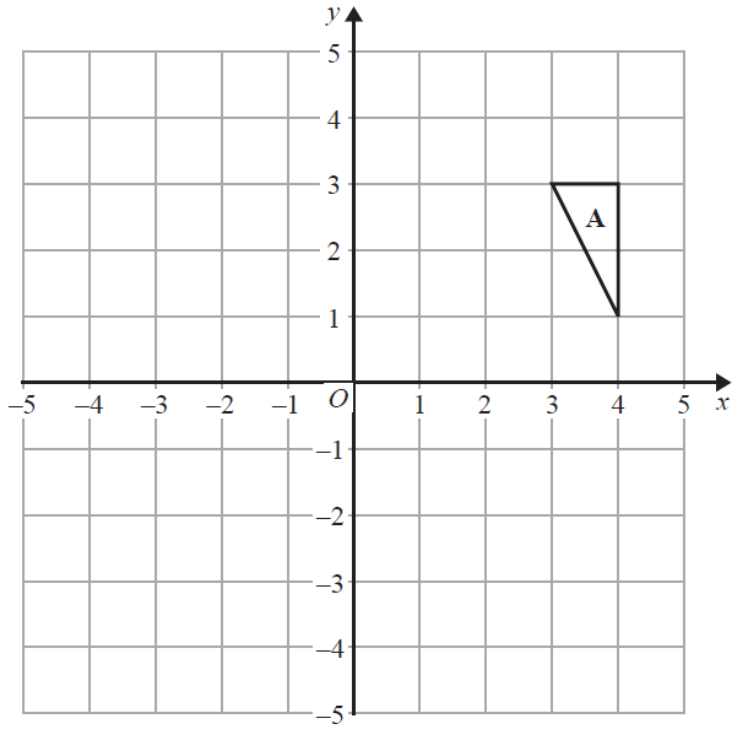
1 The diagram shows triangle **A** drawn on a grid.



Kyle reflects triangle **A** in the x-axis to get triangle **B**.
He then reflects triangle **B** in the line $y = x$ to get triangle **C**.

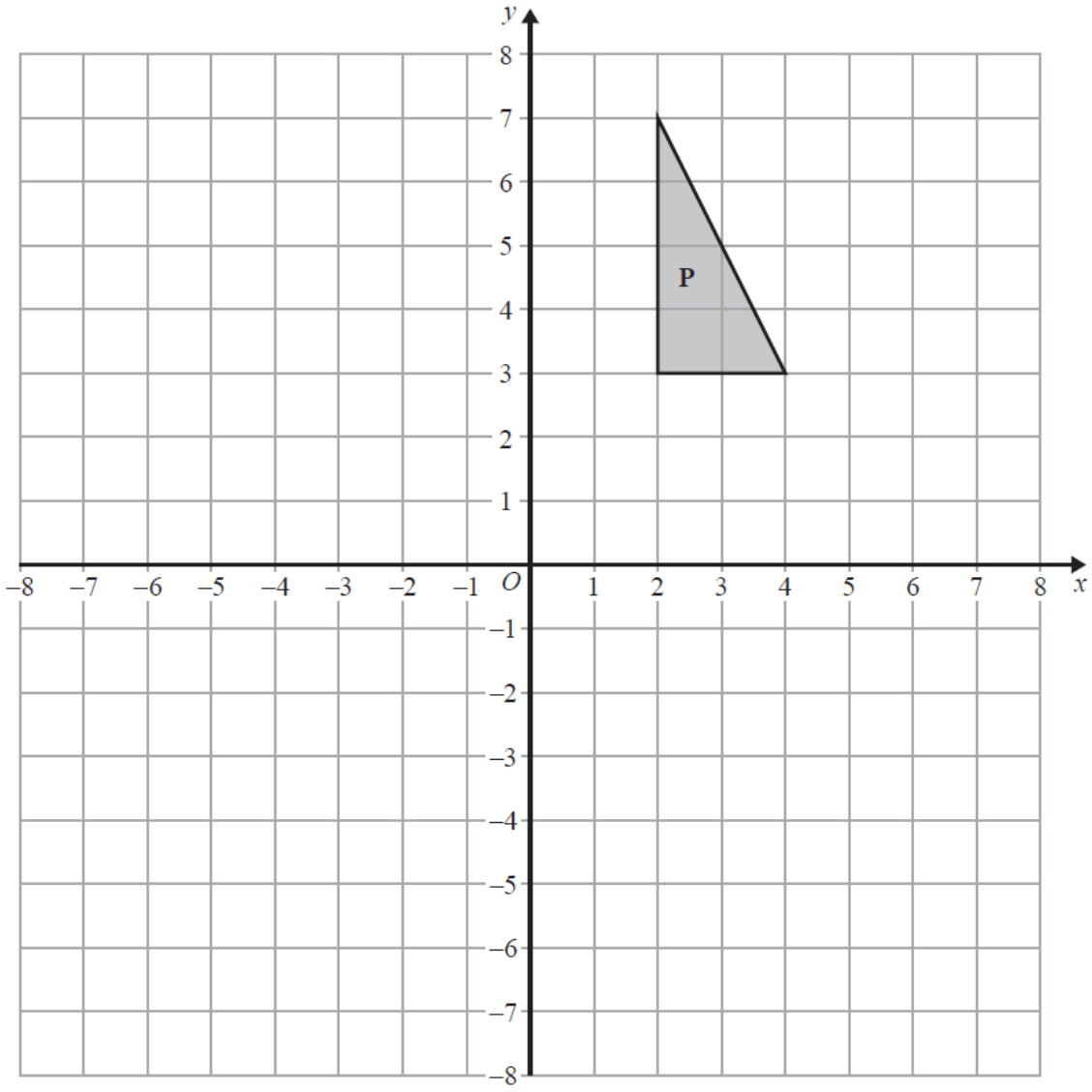
Amy reflects triangle **A** in the line $y = x$ to get triangle **D**.
She is then going to reflect triangle **D** in the x-axis to get triangle **E**.

Amy says that triangle **E** should be in the same position as triangle **C**.

Is Amy correct?
You must show how you get your answer.

(Total for Question is 3 marks)

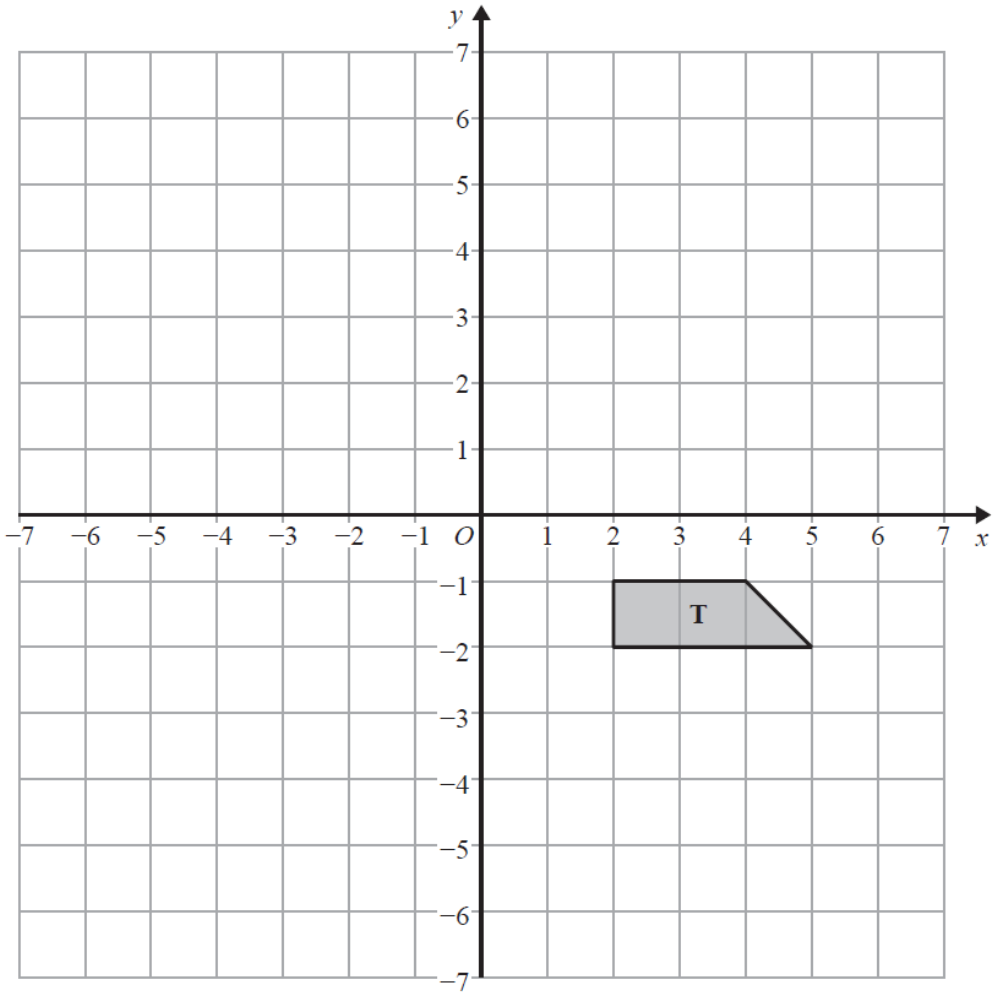
2



Enlarge shape **P** by scale factor $-\frac{1}{2}$ with centre of enlargement (0, 0).
Label your image **Q**.

(Total for Question is 2 marks)

3



(a) Rotate trapezium **T** 180° about the origin.
Label the new trapezium **A**.

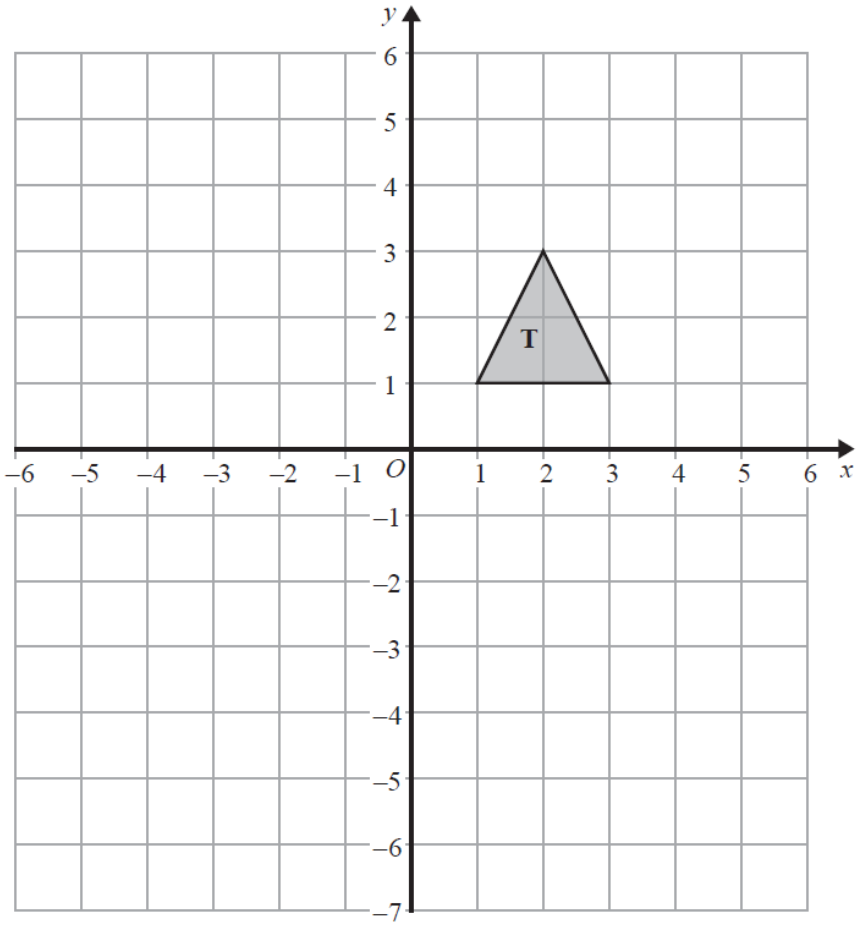
(1)

(b) Translate trapezium **T** by the vector $\begin{pmatrix} -1 \\ -3 \end{pmatrix}$
Label the new trapezium **B**.

(1)

(Total for Question is 2 marks)

4



Shape **T** is reflected in the line $x = -1$ to give shape **R**.
Shape **R** is reflected in the line $y = -2$ to give shape **S**.

Describe the **single** transformation that will map shape **T** to shape **S**.

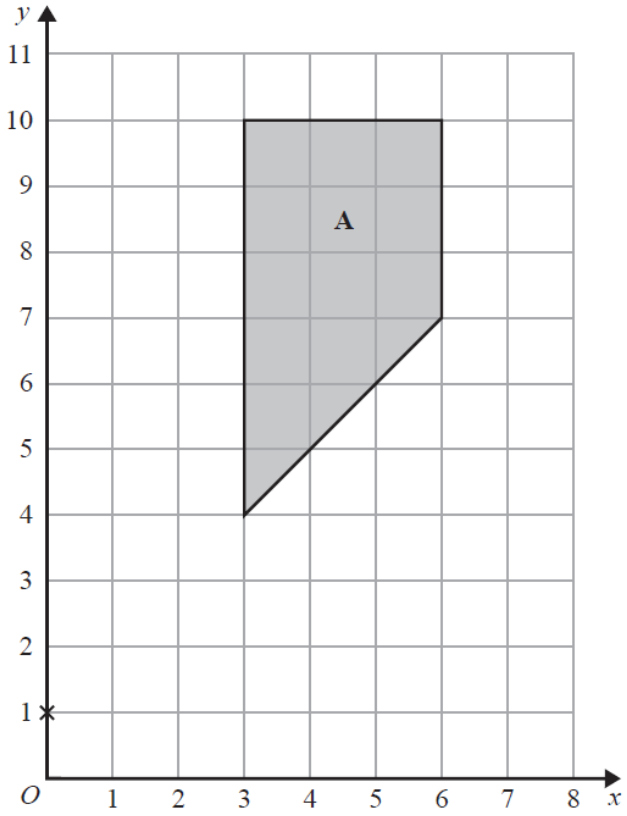
.....

.....

.....

(Total for Question is 2 marks)

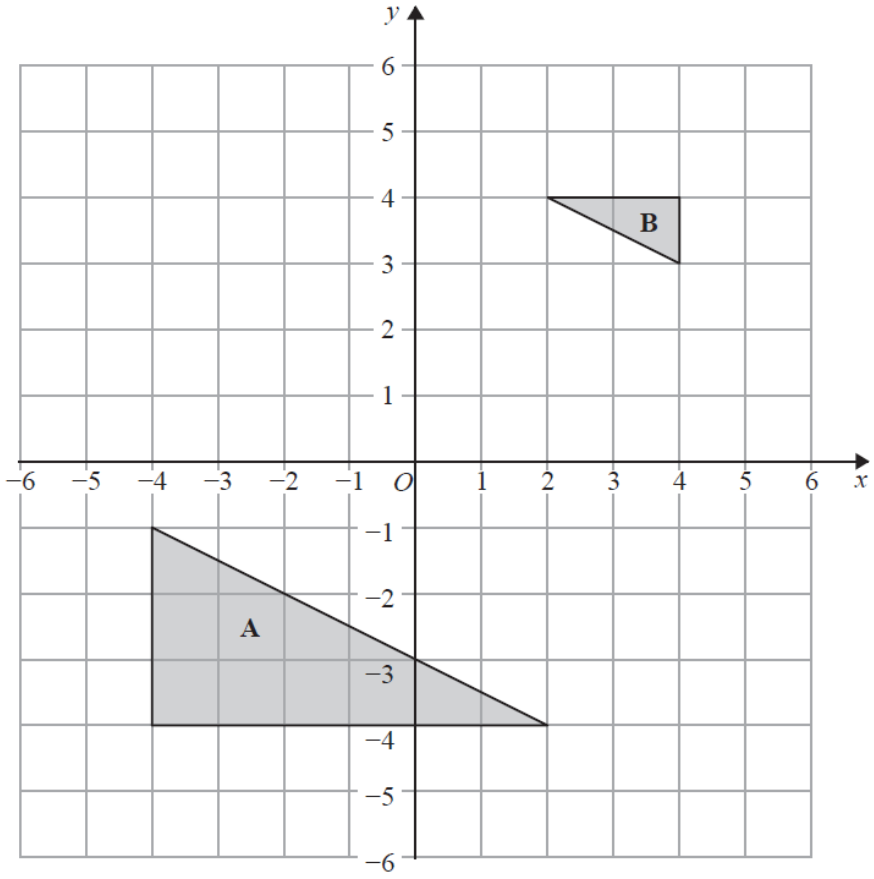
5



Enlarge shape **A** by scale factor $\frac{1}{3}$ centre (0, 1)

(Total for Question is 2 marks)

6

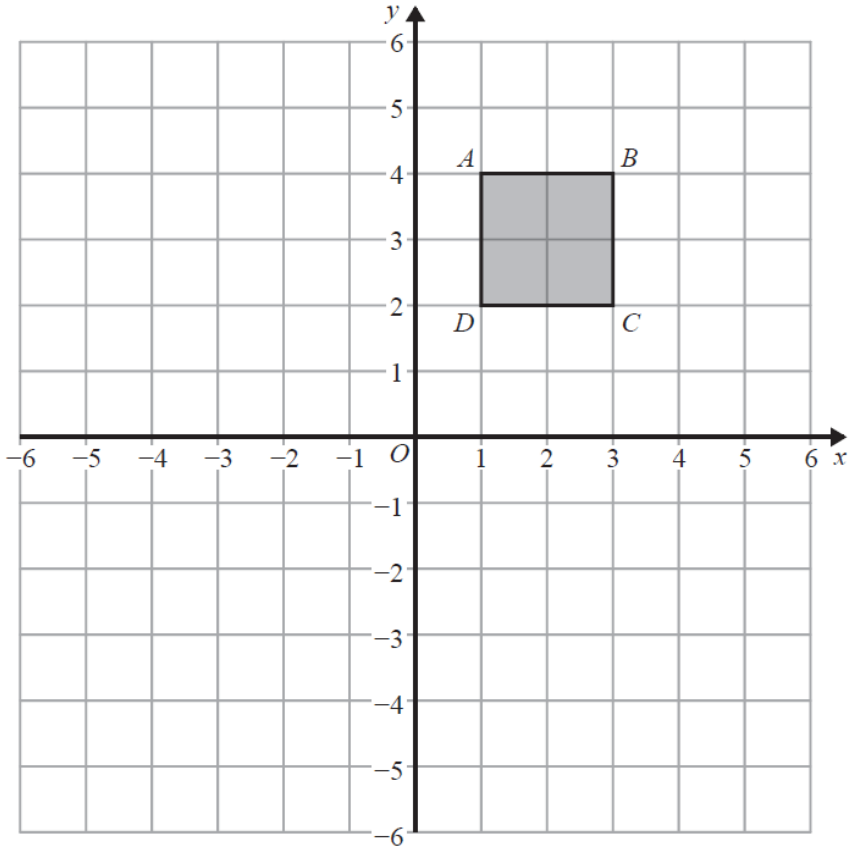


Describe fully the single transformation that maps triangle **A** onto triangle **B**.

.....

(Total for Question is 2 marks)

7



Square $ABCD$ is transformed by a combined transformation of a reflection in the line $x = -1$ followed by a rotation.

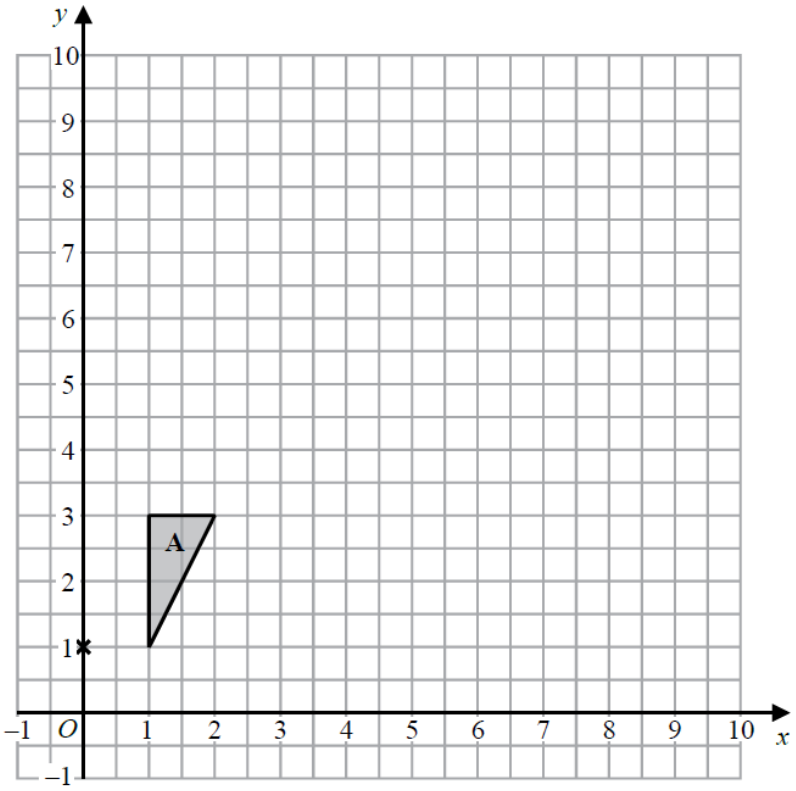
Under the combined transformation, two vertices of the square $ABCD$ are invariant.

Describe fully one possible rotation.

.....

(Total for Question is 2 marks)

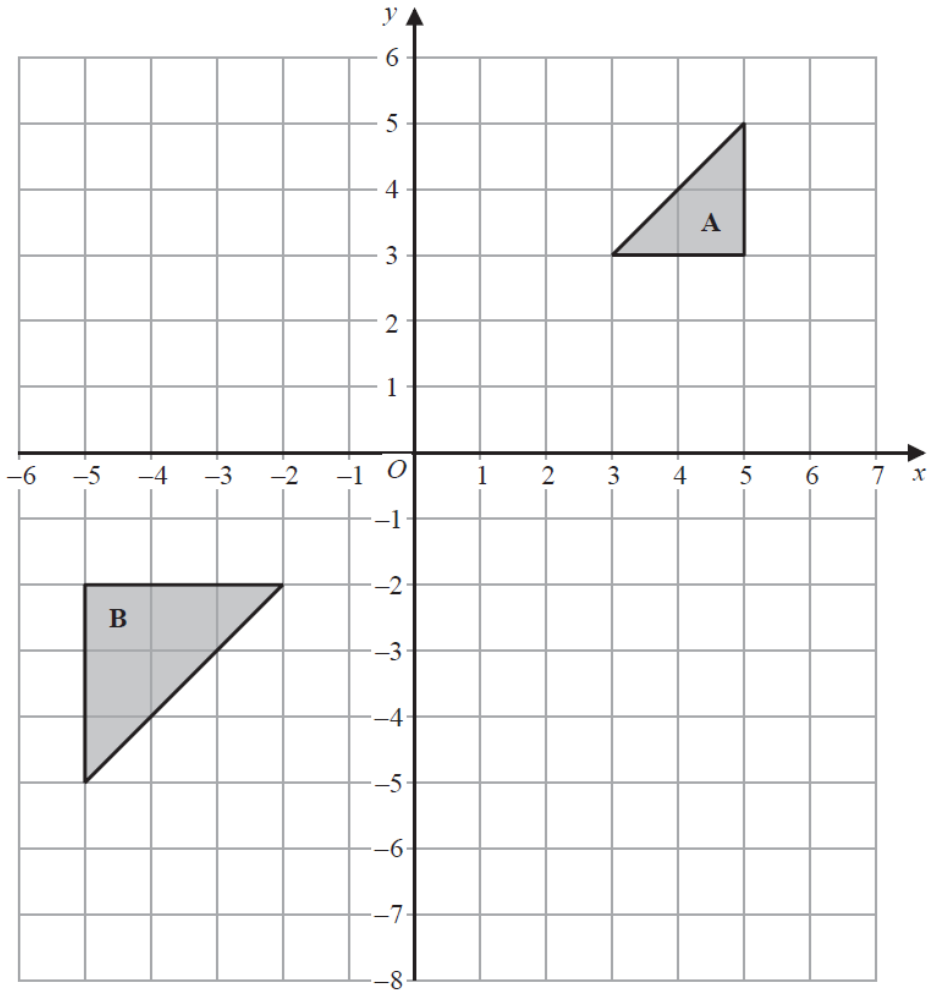
8



Enlarge triangle **A** by scale factor 2.5 with centre (0, 1)

(Total for Question is 2 marks)

9



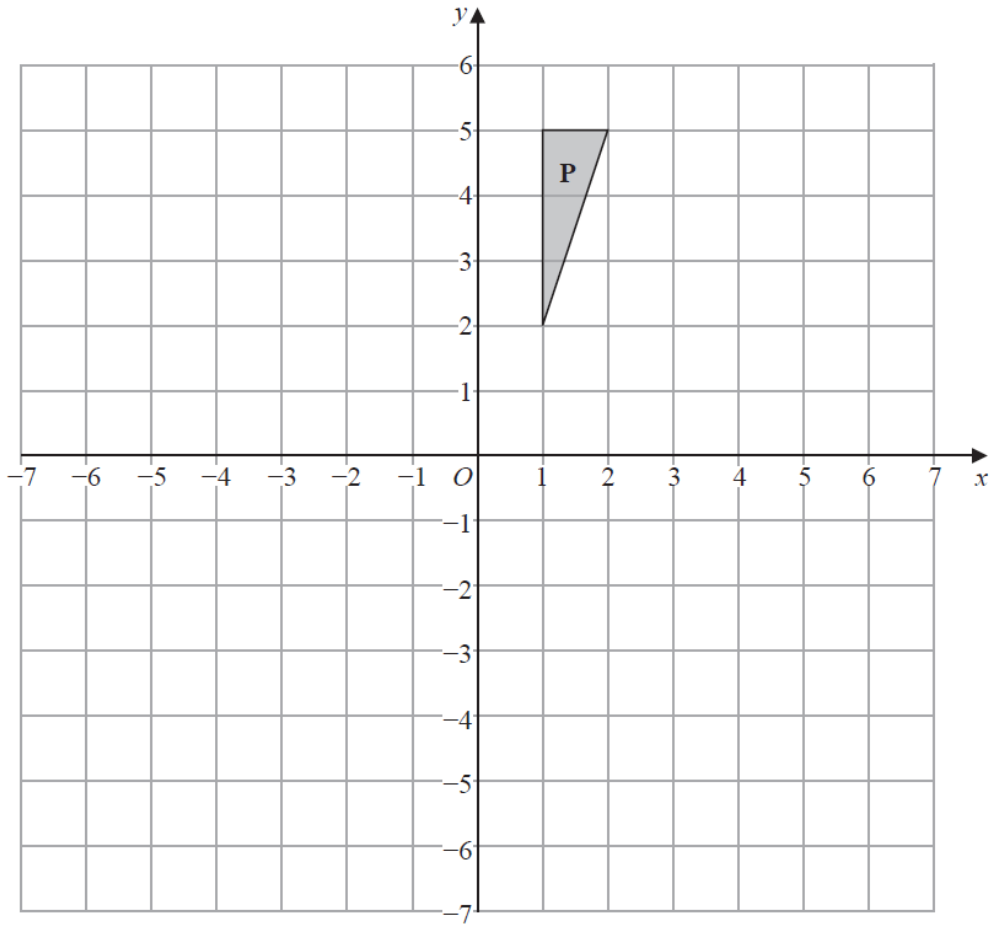
Describe fully the single transformation that maps triangle **A** onto triangle **B**.

.....

.....

(Total for Question is 2 marks)

10 The diagram shows a triangle **P** on a grid.



Triangle **P** is rotated 180° about (0, 0) to give triangle **Q**.

Triangle **Q** is translated by $\begin{pmatrix} 5 \\ -2 \end{pmatrix}$ to give triangle **R**.

(a) Describe fully the single transformation that maps triangle **P** onto triangle **R**.

.....

.....

(3)

Under the transformation that maps triangle **P** onto triangle **R**, the point A is invariant.

(b) Write down the coordinates of point A.

(..... , ...)

(1)

(Total for Question is 4 marks)