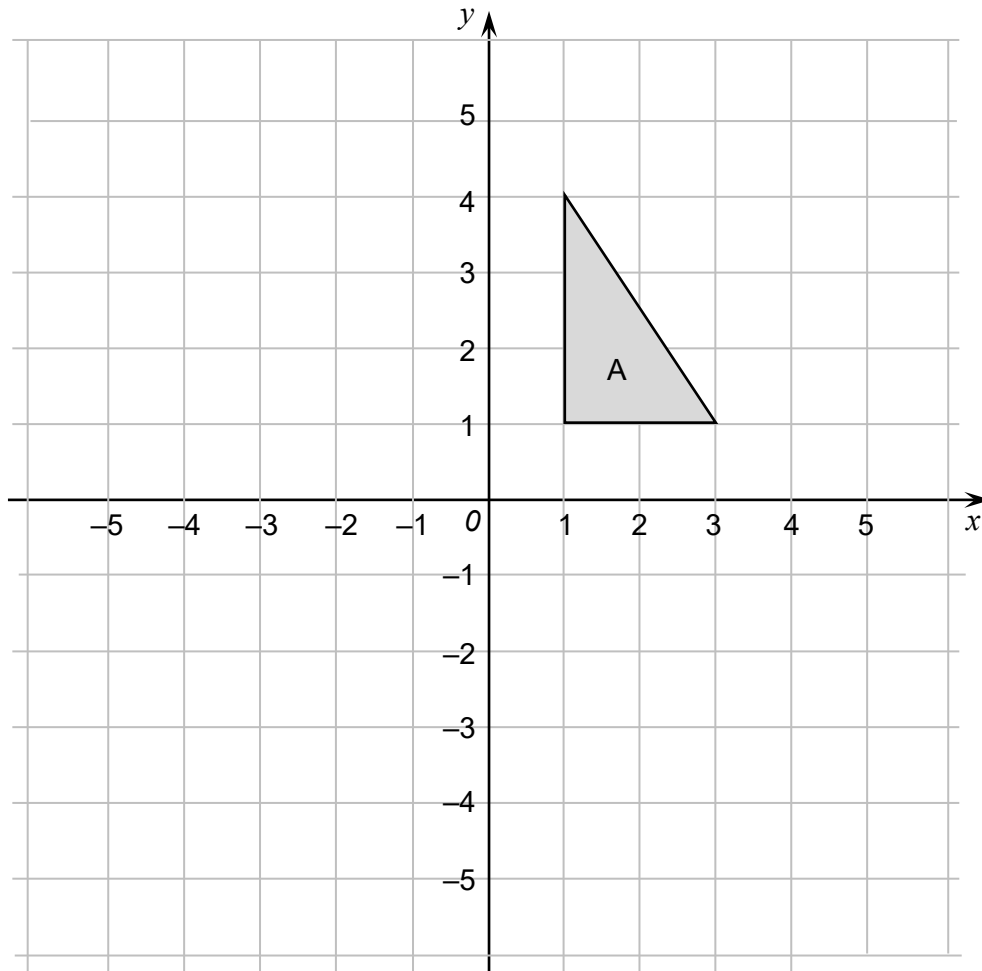


## Topic Test 1 (20 minutes)

### Transformations - Higher

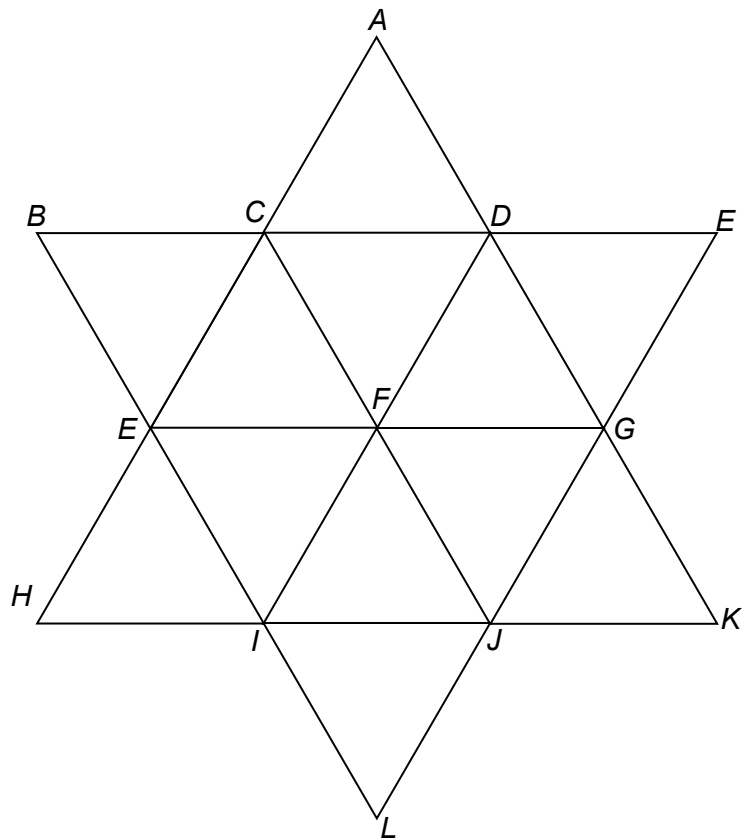
1



Reflect triangle A in the line  $y = -1$

[2 marks]

2 Equilateral triangles are joined as shown.



2 (a) Triangle  $BCE$  is reflected in line  $ID$ .  
Circle the triangle it maps to.

[1 mark]

$FJG$

$FEC$

$GFD$

$KJG$

2 (b) Triangle  $BCE$  is rotated  $120^\circ$  clockwise about point  $F$ .  
Circle the triangle it maps to.

[1 mark]

$ADC$

$EGD$

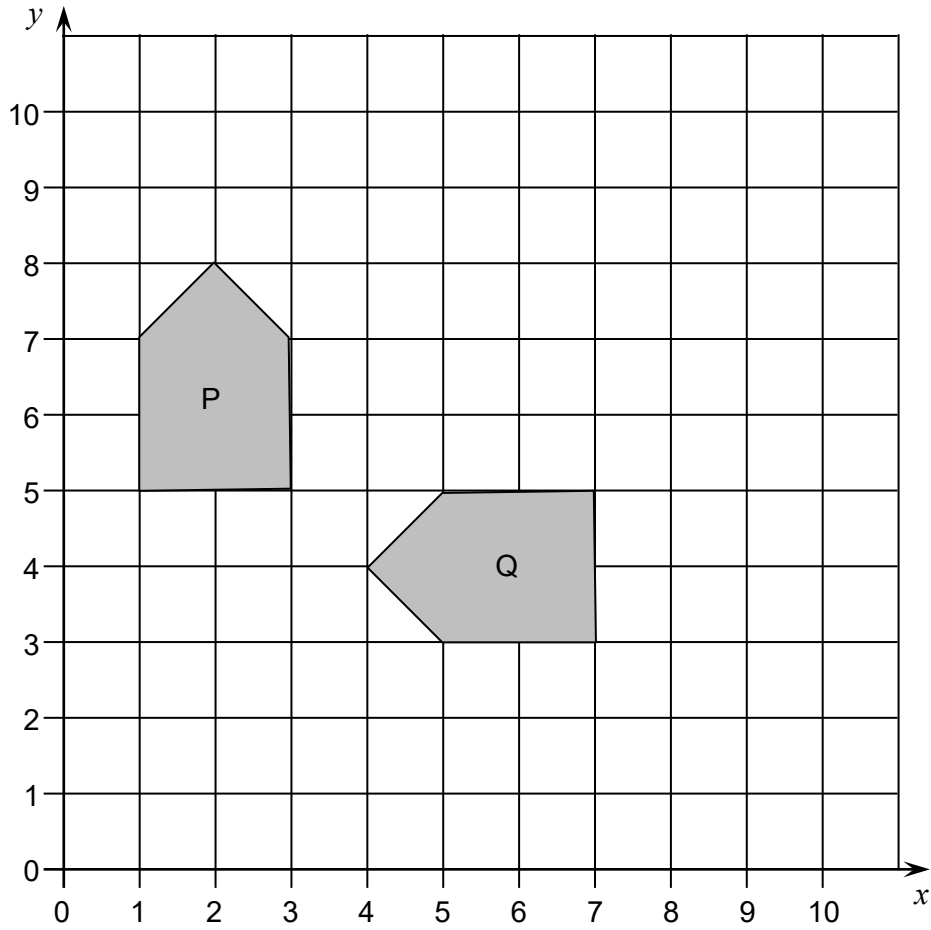
$KJG$

$LIJ$

2 (c) Triangle  $BCE$  is mapped to triangle  $KID$  by an enlargement of scale factor of  $-2$ .  
Mark the centre of enlargement on the diagram.

[1 mark]

3



Describe the transformation that maps shape P to shape Q.

[3 marks]

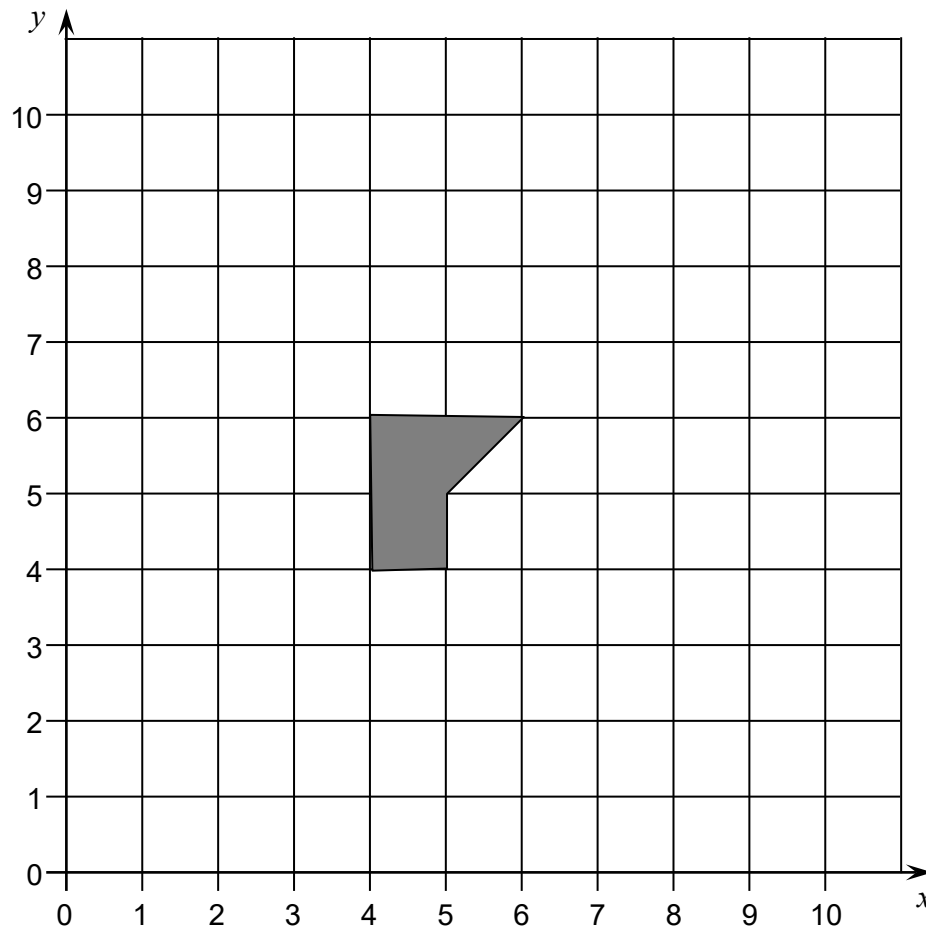
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4 (a) Translate the shape by the vector  $\begin{pmatrix} -3 \\ 2 \end{pmatrix}$

[2 marks]



4 (b) Given that  $2 \begin{pmatrix} a \\ 2 \end{pmatrix} - \begin{pmatrix} -3 \\ b \end{pmatrix} = \begin{pmatrix} 8 \\ 8 \end{pmatrix}$

Work out the values of  $a$  and  $b$

[2 marks]

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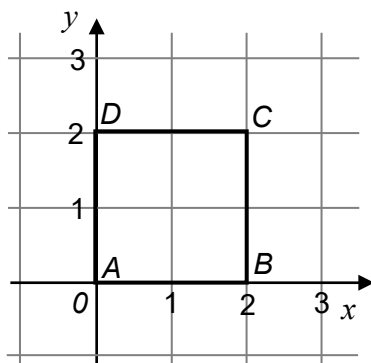
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$a =$  \_\_\_\_\_

$b =$  \_\_\_\_\_

5  $ABCD$  is the square shown.



In each part circle the point or points that are **invariant** under the transformation stated.

5 (a)  $ABCD$  is reflected in the line  $x = 2$

[1 mark]

A                      B                      C                      D

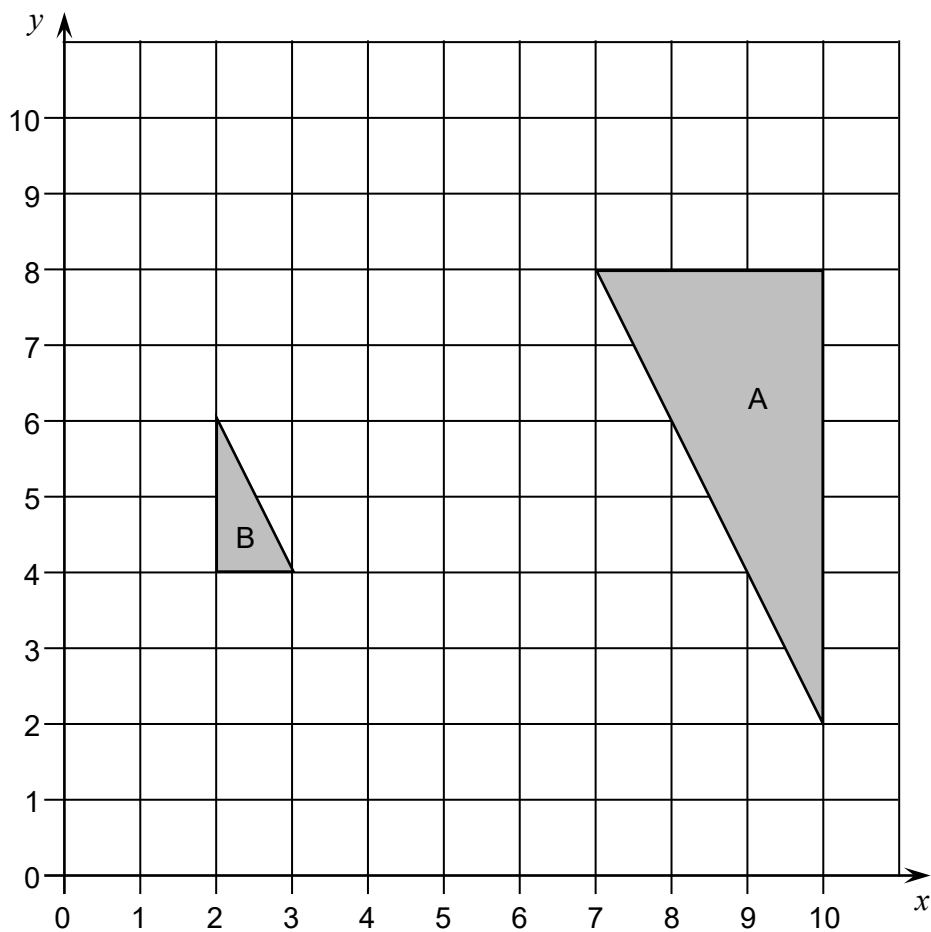
5 (b)  $ABCD$  is rotated  $90^\circ$  anti-clockwise about  $(0, 0)$  **followed** by a reflection in the  $y$ -axis.

[1 mark]

A                      B                      C                      D

6 Describe the transformation that maps triangle A to triangle B.

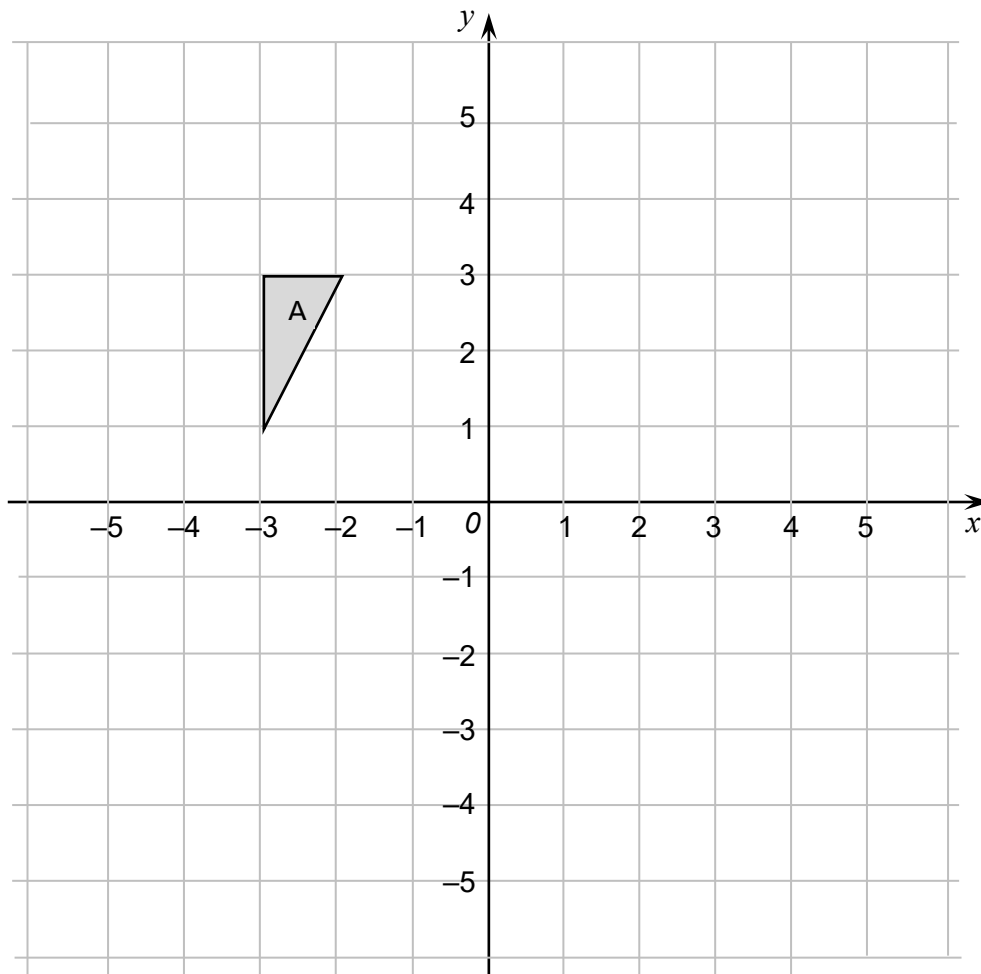
[3 marks]



- 7 Triangle A is enlarged by a scale factor of 2 from centre  $(-4, 4)$  to give triangle B. Triangle B is then rotated  $180^\circ$  about  $(2, 1)$  to give triangle C.

Work out the transformation that would map triangle A to triangle C.

[3 marks]



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