GCSE MATHEMATICS

Higher tier

Geometry and Measures

Topic test – Transformations

v1.0

Name _____

Materials

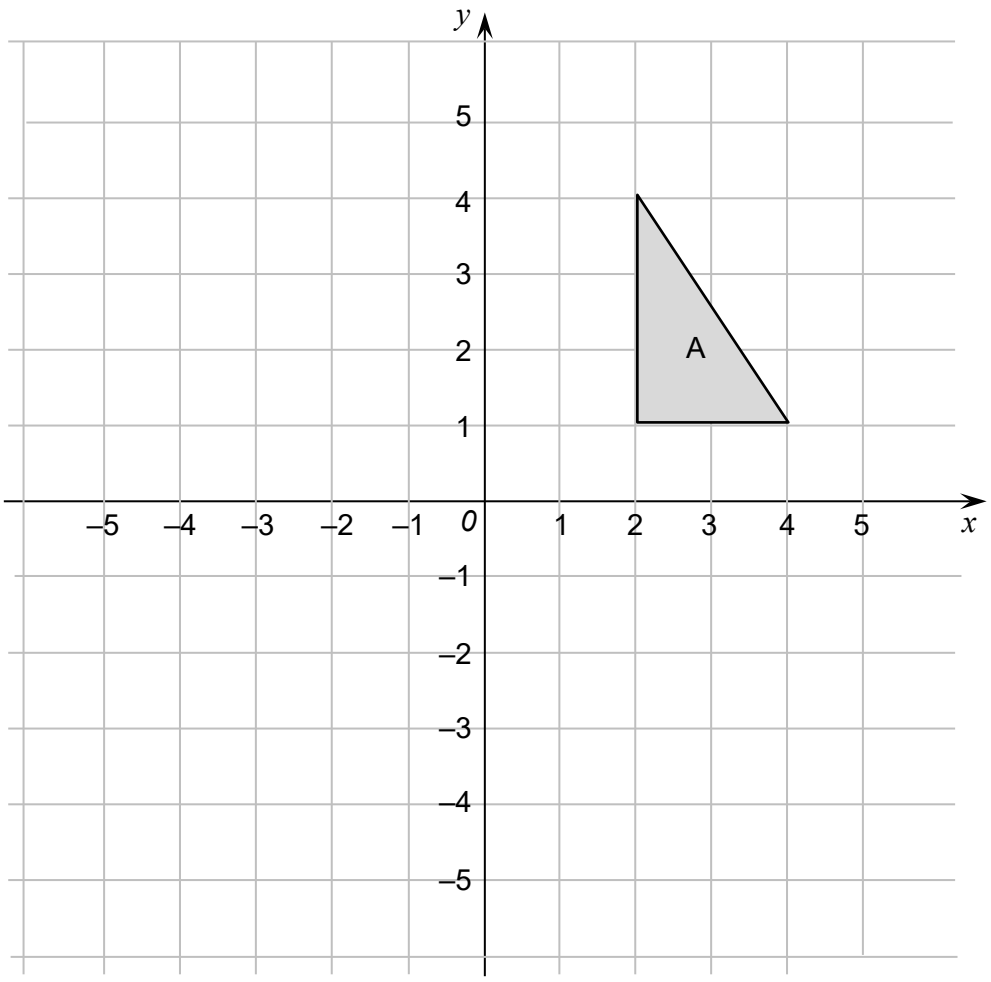
For this paper you must have:
- Mathematical instruments
- You must not use a calculator

Information
- The marks for questions are shown in brackets.
- The maximum mark for this paper is 29.

Advice
- In all calculations, show clearly how you work out your answer.

For Teacher's Use	
Pages	Mark
2 - 3	
4 - 5	
6 - 7	
8	
TOTAL	

1 Here is a triangle on a grid.



1 (a) Reflect **Triangle A** in the line $y = -1$ label it B.

[2 marks]

1 (b) Translate **Triangle A** $\begin{pmatrix} -7 \\ -6 \end{pmatrix}$ label it C.

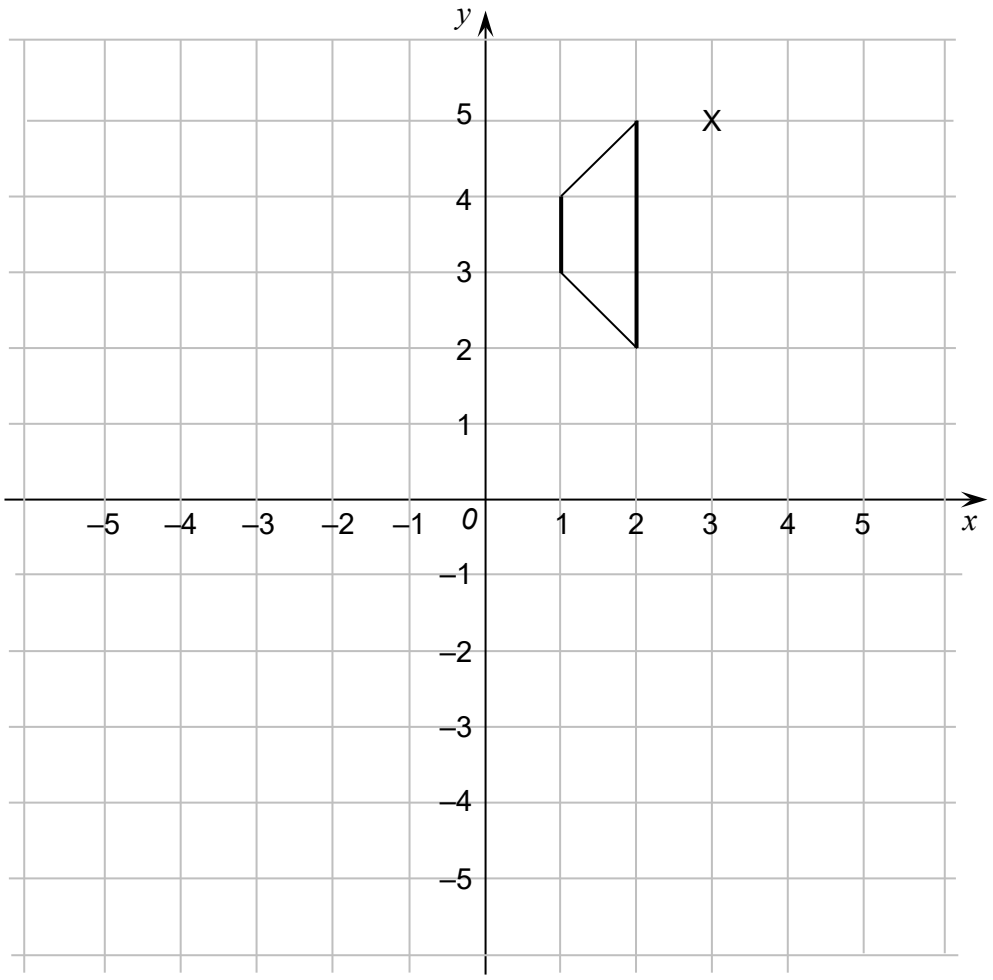
[1 mark]

1 (c) Rotate **Triangle A** 90° anticlockwise about (0, 0) label it D.

[2 marks]

2 Enlarge the quadrilateral on the grid by a scale factor of 3 centre (3, 5)

[2 marks]



3 A square with sides 6 cm long is enlarged by scale factor 2.

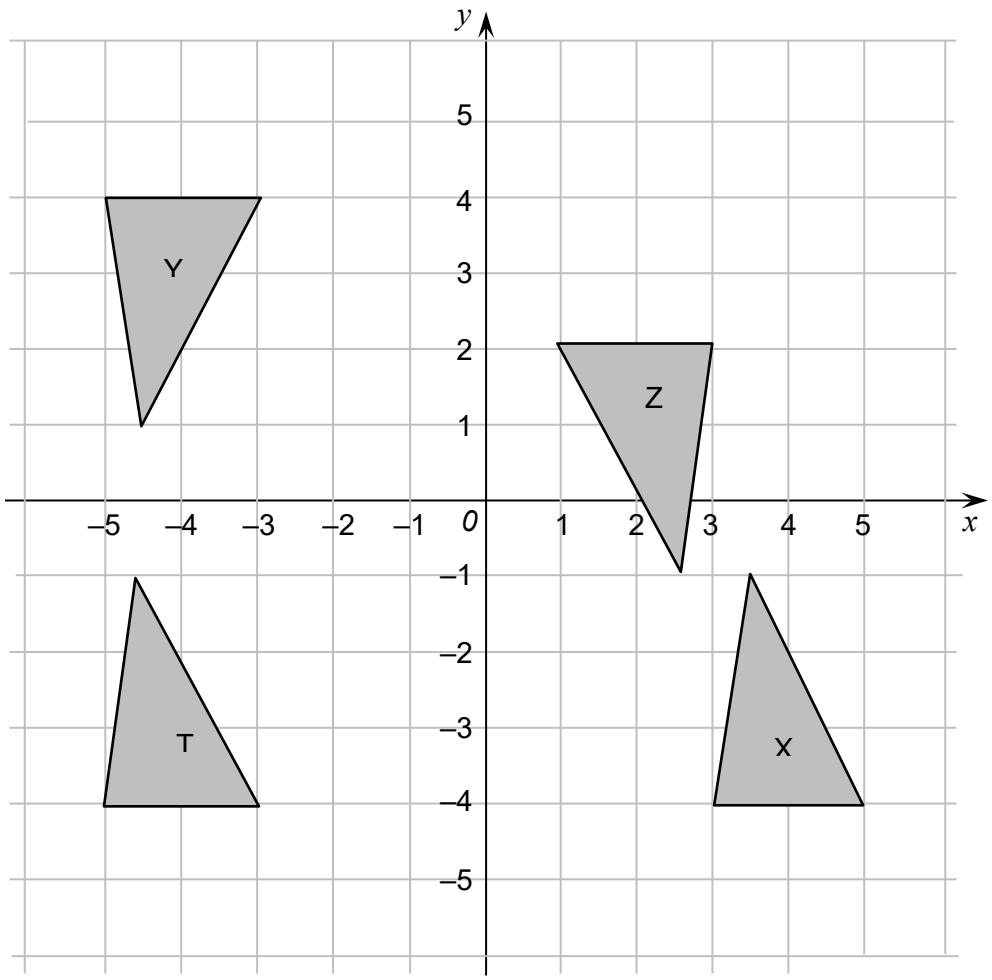
How long are the sides after the enlargement?

[1 mark]

Answer _____

8

4 Here are some congruent triangles.



4 (a) Describe fully the **single** transformation that would map triangle T to triangle X.

[2 marks]

4 (b) Describe fully the **single** transformation that would map triangle T to triangle Y.

[2 marks]

4 (c) Describe fully the **single** transformation that would map triangle X to triangle Z.

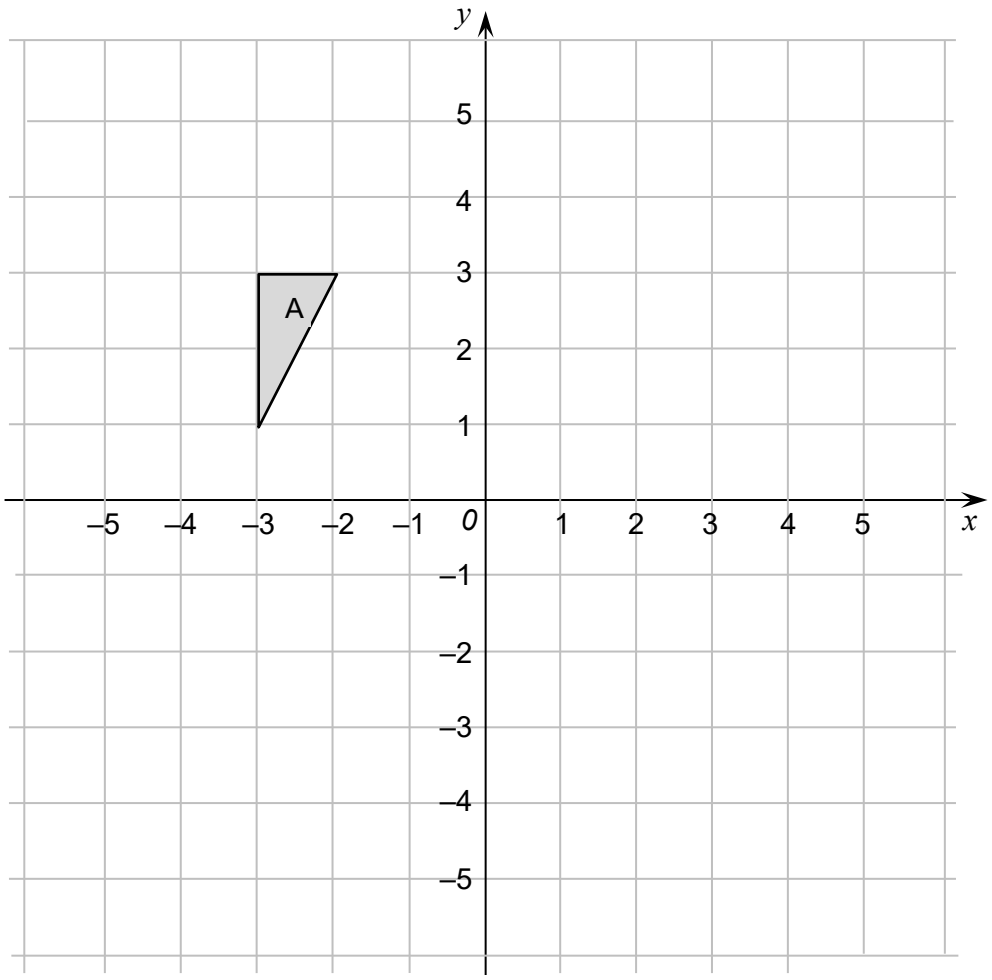
[2 marks]

5 Triangle A is enlarged by a scale factor of 2 from centre (–4, 4) to give triangle B.

Triangle B is then rotated 180° about (2, 1) to give triangle C.

Draw Triangles B and C on the grid.

[4 marks]



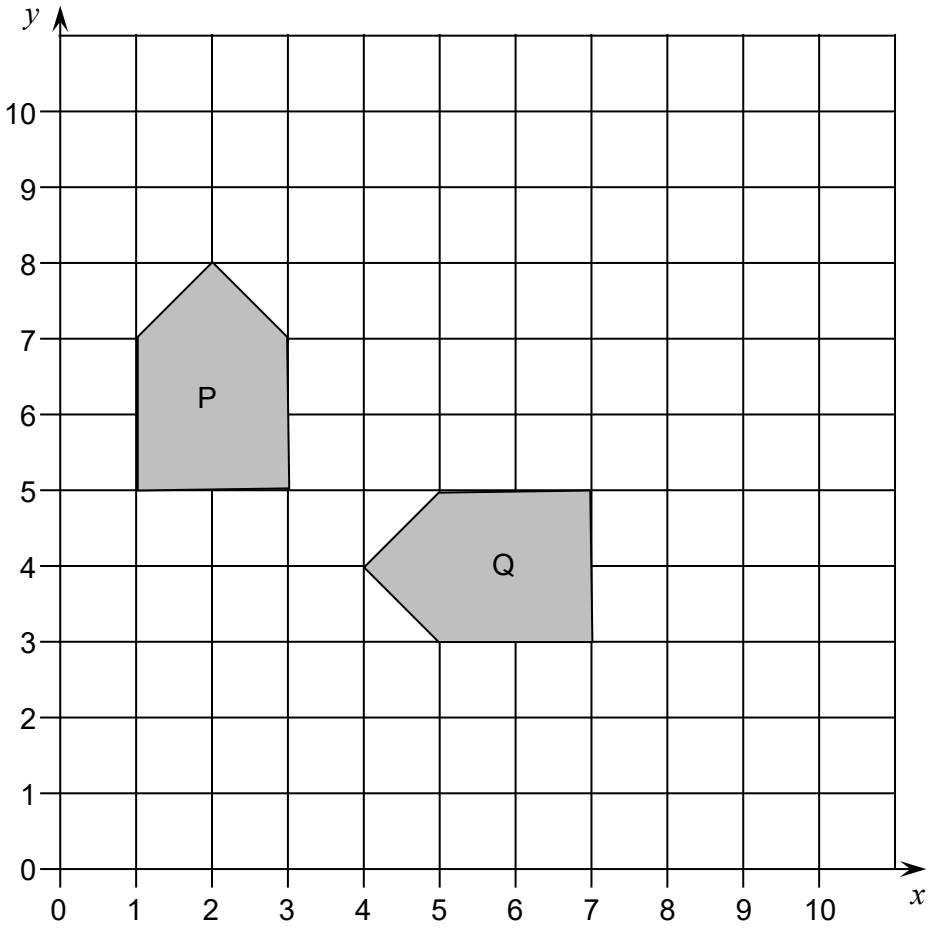
Describe fully the **single** transformation that would map triangle A to triangle C.

[2 marks]

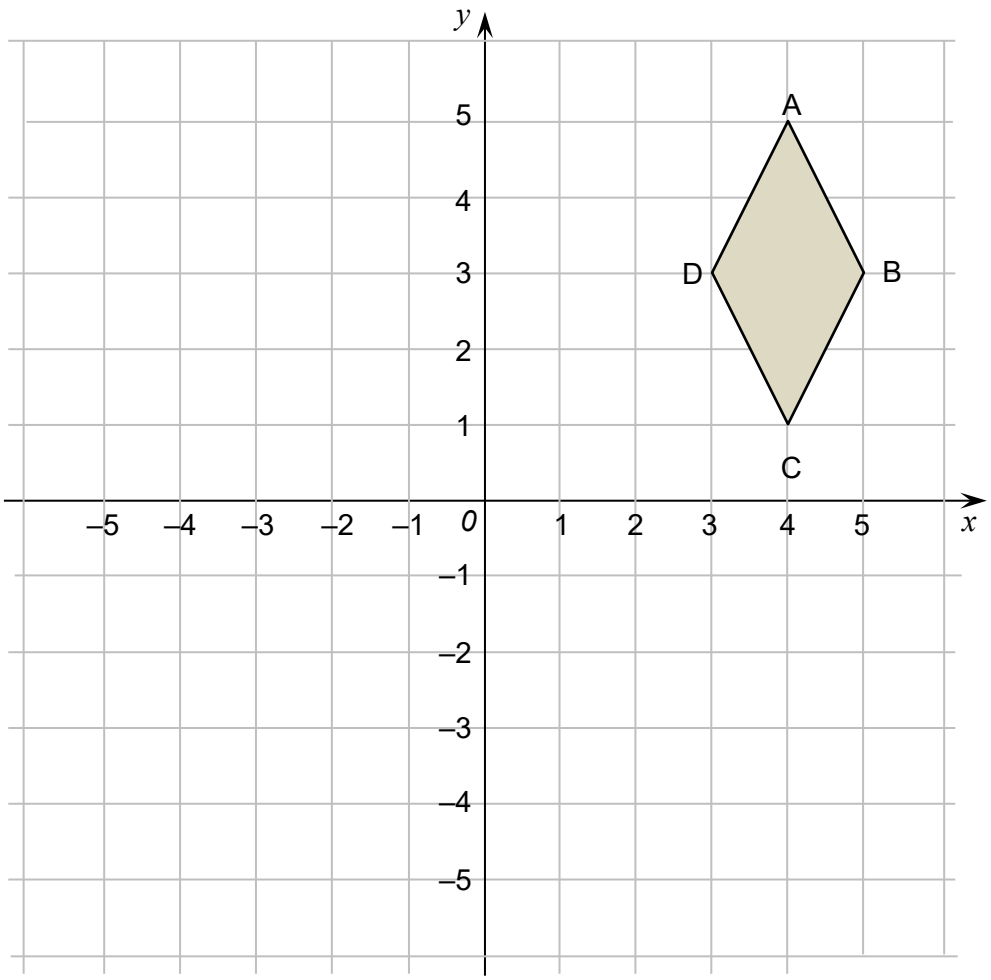
12

6 Describe the transformation that maps shape P to shape Q.

[3 marks]



7



7 (a) Shape ABCD is reflected in the line $y = 3$.
Which vertex or vertices are invariant?

[2 marks]

Answer _____

7 (b) Shape ABCD is rotated 90° anticlockwise about (4, 1)
Are any of the vertices of the shape invariant under this transformation?

Explain your answer.

[2 marks]

_____

_____

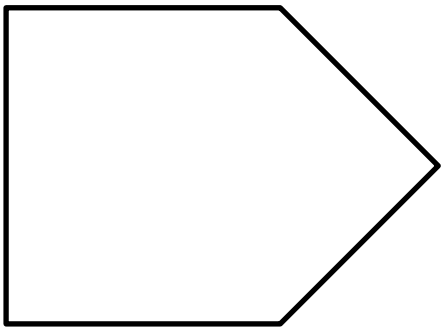
_____

7

8 Enlarge this shape with scale factor $-\frac{1}{2}$ about X.

[2 marks]

X



END OF QUESTIONS

2