

## GCSE Transformations 1: Assessment A

Your Name:

Tutor Group:

End of GCSE target grade:

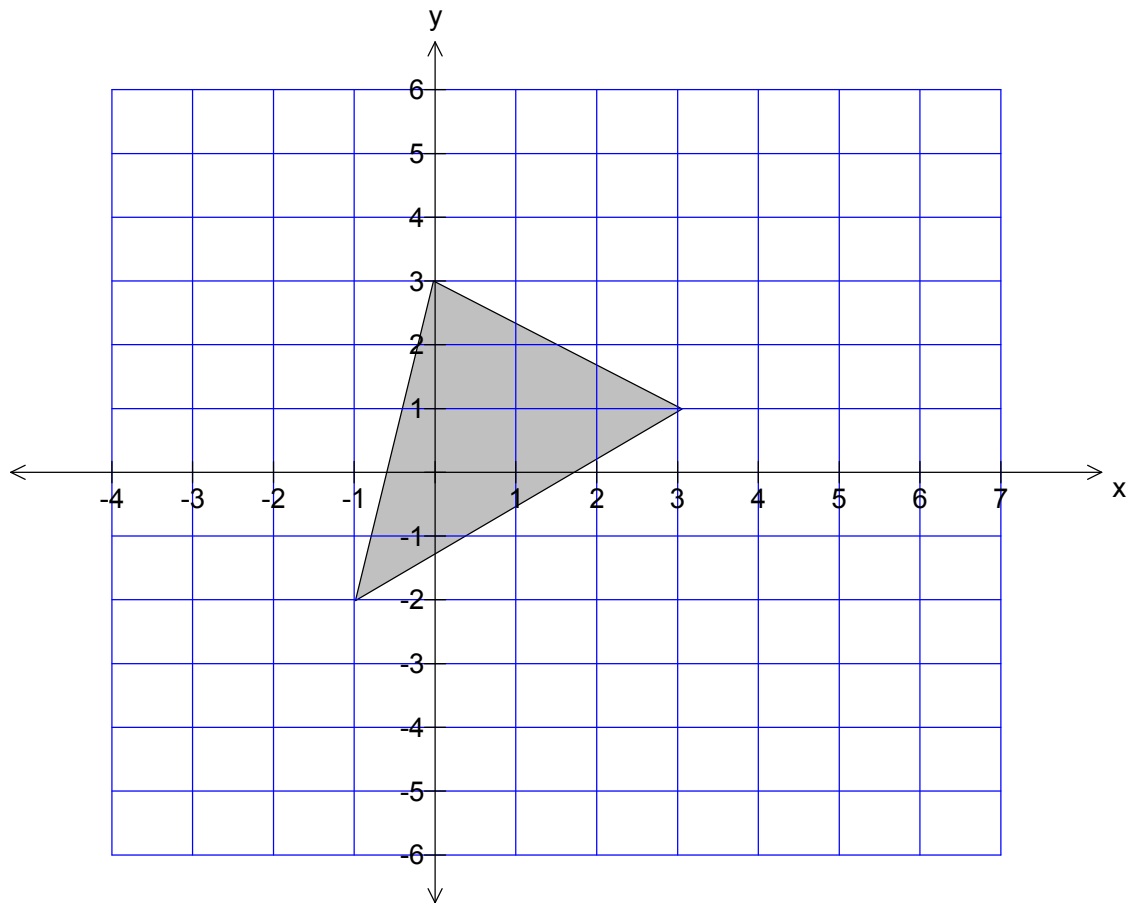
Grade achieved:

Grade D objectives

- I can translate, rotate and reflect a shape.
- I can enlarge a shape by a positive whole number scale factor.

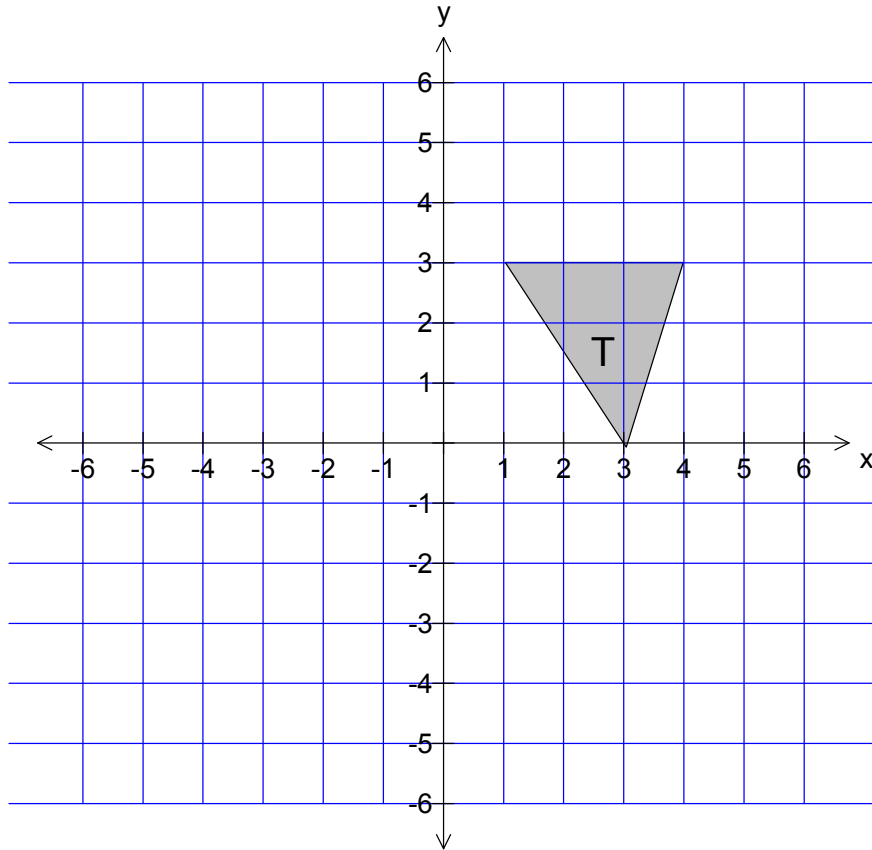


1.



Enlarge the shaded triangle by a scale factor 2, centre (1, 1).

[3]



Triangle **T** has been drawn on the grid.

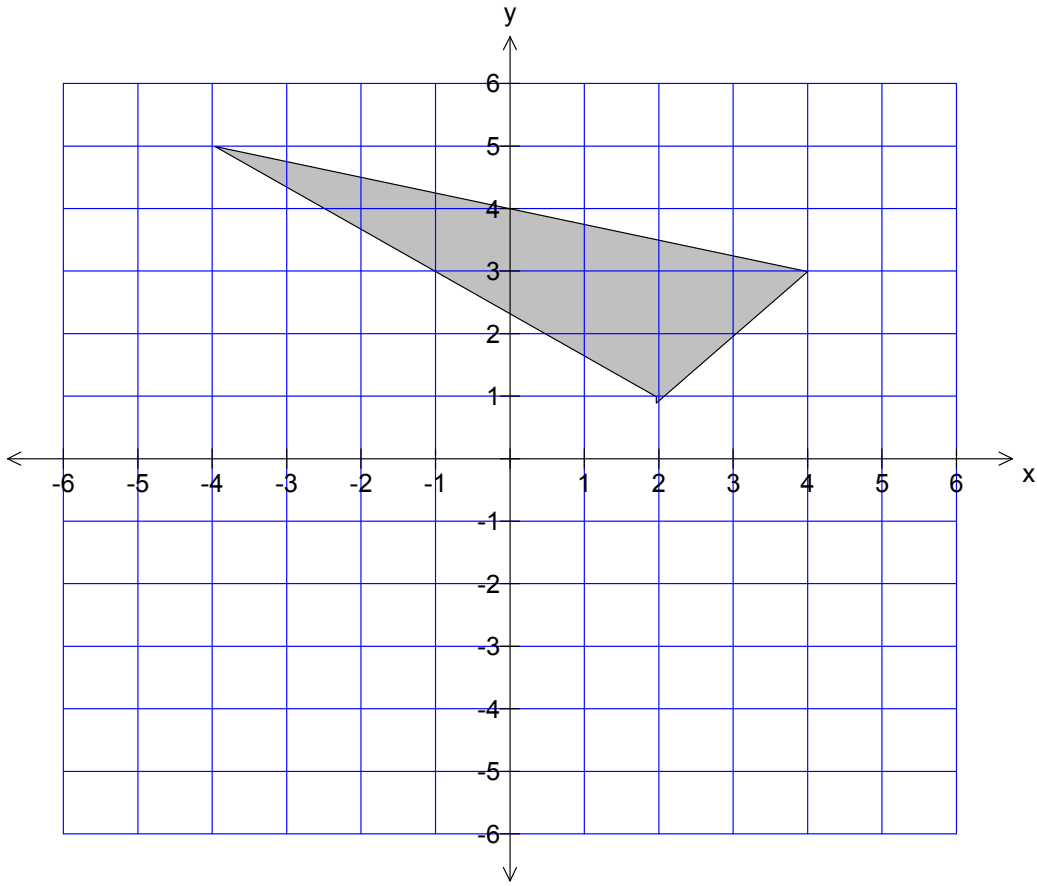
- (a) Reflect triangle **T** in the line  $y = -1$ .  
Label the new triangle **A**. [2]
- (b) Rotate triangle **T** through  $90^\circ$  anticlockwise, centre  $O$ .  
Label the new triangle **B**. [2]
- (c) Translate triangle **T** using the translation vector  $\begin{pmatrix} -1 \\ 3 \end{pmatrix}$ .  
Label the new triangle **C**. [2]

**Grade C objectives**

- I can enlarge a shape with a fractional scale factor
- I can describe a single transformation fully.
- I can reflect in diagonal mirror lines

☺	☹	☹

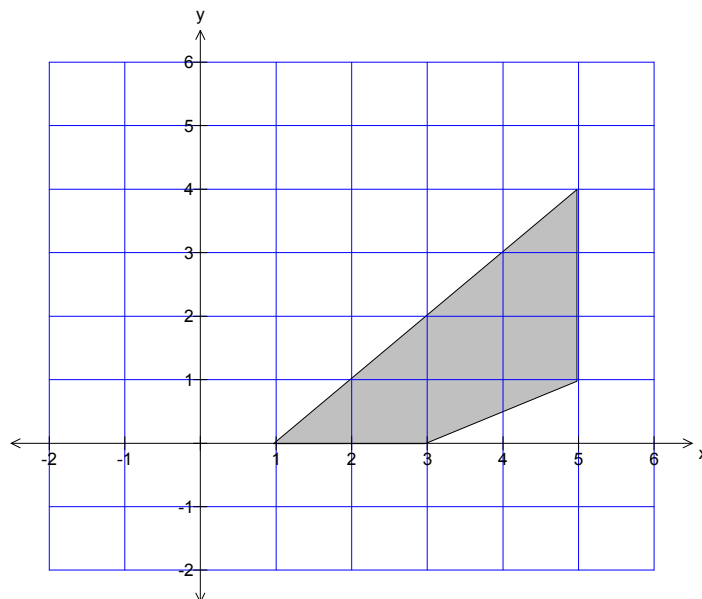
3.



Enlarge the shaded triangle using a scale factor of  $\frac{1}{2}$ , centre  $(0, -3)$ .

[2]

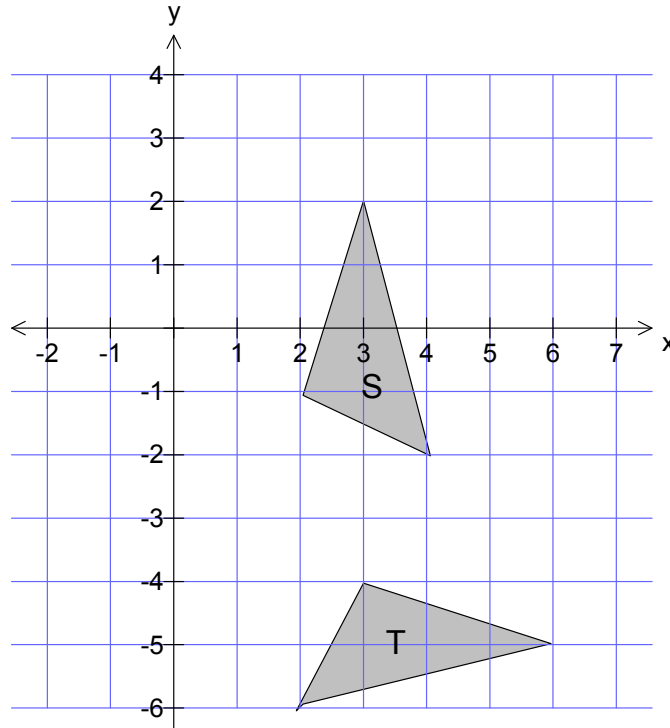
4.



Reflect the shaded quadrilateral in the line  $y = x$ .

[2]

5.

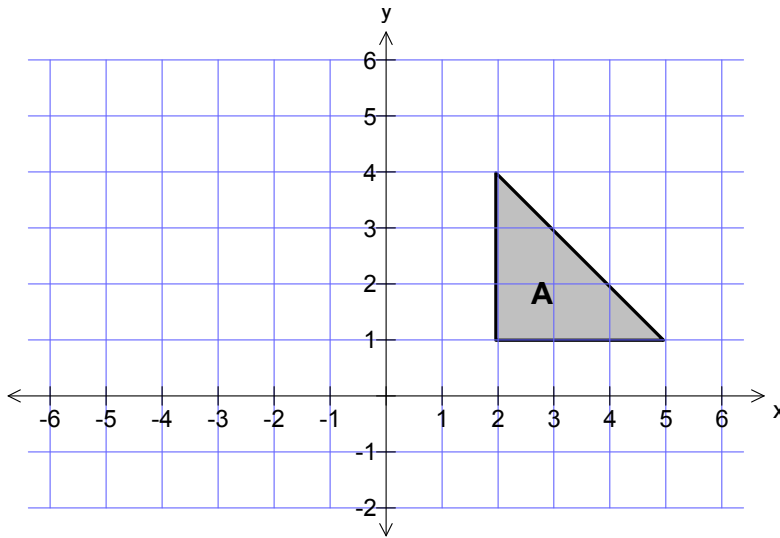


Describe the **single** transformation that maps triangle S onto triangle T.

.....  
 ..... [3]

Grade B objectives	☺	☹	☹
<ul style="list-style-type: none"> <li>I can find a single transformation that has the same effect as a combination of 2 transformations.</li> </ul>			

6.

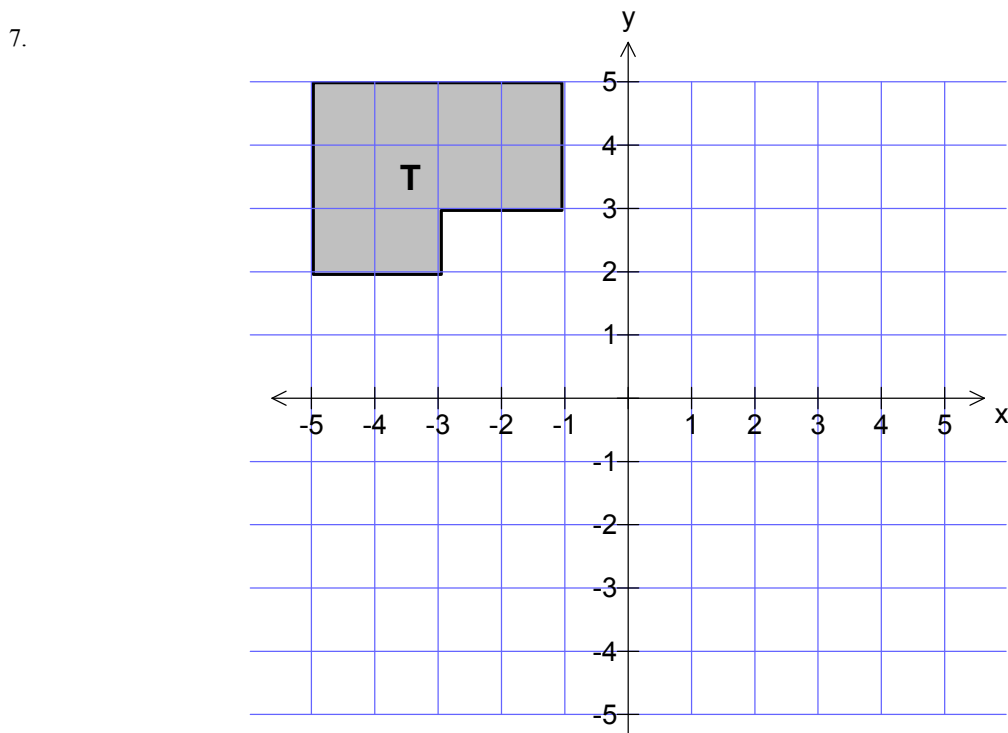


Triangle A is rotated  $180^\circ$  about the point (1, 2) to give triangle B.  
 Triangle B is then reflected in the line  $y = 2$  to give triangle C.

Describe the single transformation that takes triangle A to triangle C.

..... [2]  
 .....

<b>Grade A objectives</b>	☺	☹	☹
• I can enlarge a shape with a negative scale factor			
• I can recognise and apply transformation of graphs, such as those represented by: $y = f(x) + a$ , $y = f(ax)$ , $y = f(x+a)$ , $y = f(-x)$ , $y = -f(x)$ and $y = af(x)$			



Enlarge shape **T** by scale factor  $-1.5$  with centre of enlargement  $(-1,1)$ .

[2]

<b>Grade A* objectives</b>	☺	☹	☹
• I can write a quadratic in completed square form.			
• I can use completed square form to identify the vertex of a quadratic and to sketch its shape.			

8. a) The quadratic  $x^2 - 6x + 15$  in the form  $(x - p)^2 + q$  for all values of  $x$ .  
Find the values of  $p$  and  $q$ .

$p = \dots\dots\dots$   $q = \dots\dots\dots$  [3]

- b) State the coordinates of the vertex of the curve  $y = x^2 - 6x + 15$ .

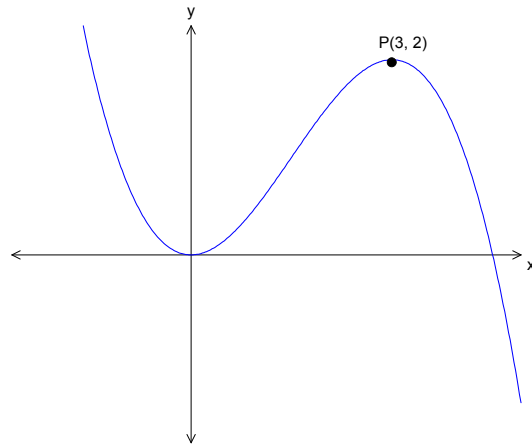
Vertex at  $(\dots\dots, \dots\dots)$  [2]

- c) Describe fully the transformation that maps the curve  $y = x^2$  onto the curve  $y = x^2 - 6x + 15$ .

.....  
.....

[2]

9. This is a sketch of the curve with equation  $y = f(x)$ .



The curve has a vertex at the point  $P(3, 2)$ .

Write down the coordinates of the image of  $P$  in each of the following transformed graphs:

a)  $y = -f(x)$  (....., .....

b)  $y = f(x + 2)$  (....., .....

c)  $y = 2f(x)$  (....., .....

d)  $y = f(x) - 3$  (....., .....

[4]

**Teacher feedback:**

In order to get to the next grade (or in order to improve the quality of your work) you should...

The following aspect of your work was particularly good ...