Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_

**Composition of Transformations**

1. The point  is rotated 90º about the origin and then dilated by a scale factor of 4. What are the coordinates of the resulting image?
2. What is the image of point (2, -3) under ?

3. Find the image of point  under the composition of translations .

1. The vertices of  are , , and . The image of  after the composition  is . State the coordinates of . [The use of the set of axes below is optional.]



1. Triangle *ABC* has coordinates , **, and .

*a* On the grid below, draw and label *.*

*b* Graph and state the coordinates of *,* the image of  after the composition .

*c* Write a transformation equivalent to .



1. On the accompanying grid, graph and label , where *A* is  and *B* is . Under the transformation , *A* maps to , and *B* maps to . Graph and label . What single transformation would map  to ?

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1. Given the transformations:



What is ?

1. Given triangle TRY with vertices T(-2, 3), R(3, 6), Y(1, -1)
2. Perform the composition of transformations $r$x-axisR90

b) State the single transformation equivalent to the above composition of transformations

1. Given CAT with vertices C(-5, 3), A(2, 6), T(7, 1)
2. Perform the composition of transformations R90ry = x

b) State the single transformation equivalent to the above composition of transformations

1. Given DOG with vertices D(1, 2), O(5, 7), G(8, 4)
2. Perform the composition of transformations rx-axisry =x
3. State the single transformation equivalent to the above composition of transformations
4. As shown in the accompanying diagram, the star in position 1 on a computer screen transforms to the star in position 2.



This transformation is best described as a

|  |  |
| --- | --- |
| 1) | line reflection |
| 2) | translation |
| 3) | rotation |
| 4) | dilation |

1. After a composition of transformations, the coordinates , , and  become , , and , as shown on the set of axes below.



Which composition of transformations was used?

|  |  |
| --- | --- |
| 1) |  |
| 2) |  |
| 3) |  |
| 4) |  |

1. On the accompanying grid, graph and label , where *A* is  and *B* is . Under the transformation , *A* maps to , and *B* maps to . Graph and label . What single transformation would map  to ?

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14. The coordinates of the vertices of  are , **, and .

*a* On the graph below, draw and label *.*

*b* Graph and state the coordinates of *,* the image of  after a reflection over the line .

*c* Graph and state the coordinates of *,* the image of  after a reflection in the *x*-axis.

*d* Graph and state the coordinates of *,* the image of  after the transformation .

