

Grade 8 - Translations, Reflections and Rotations - Worksheet

Common Core 8.G.A.1, 8.G.A.2, 8.G.A.3 · maths-pdf.fr/en/

Name: _____ Class: _____ Date: ____/____/____

These 20 problems practice translations, reflections, rotations and congruence on the coordinate plane (Common Core 8.G.A.1, 8.G.A.2 and 8.G.A.3). Each problem has its own space for work, so print the page and write directly on it.

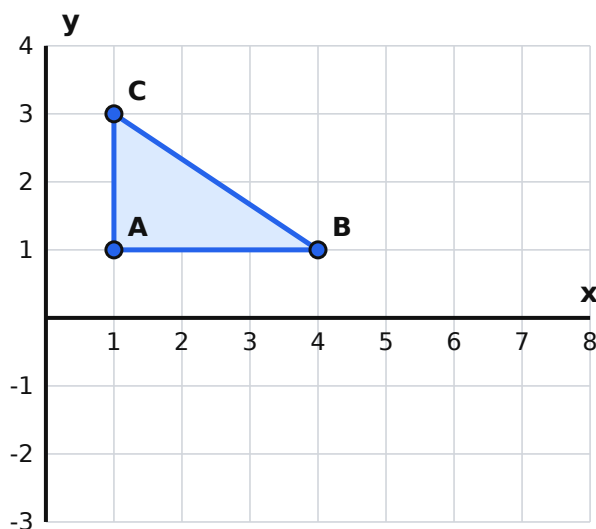
The problems start with direct skill checks and grow harder as you go. Later items combine transformations and describe sequences of moves. Use the answer key afterwards to check every step.

Grade 8 · Common Core State Standards: **8.G.A.1, 8.G.A.2, 8.G.A.3**

Exercise 1 - Translate a point

Slide the point $(-5, 4)$ right 6 and down 7. Give the image.

Exercise 2 - Translate a triangle



Triangle ABC.

Translate triangle ABC right 3 and down 2. List the image vertices.

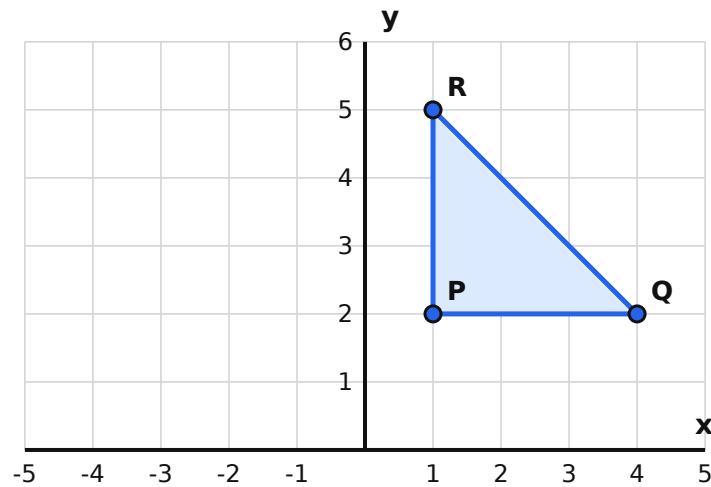
Exercise 3 - Reflect across the x-axis

Reflect $(4, -3)$ across the x-axis.

Exercise 4 - Reflect across the y-axis

Reflect $(-5, 2)$ across the y-axis.

Exercise 5 - Reflect a triangle



Triangle PQR.

Reflect triangle PQR across the y-axis and list the image vertices.

Exercise 6 - Rotate 90 degrees counterclockwise

Turn the point $(4, -3)$ by 90° counterclockwise about the origin. Give the image.

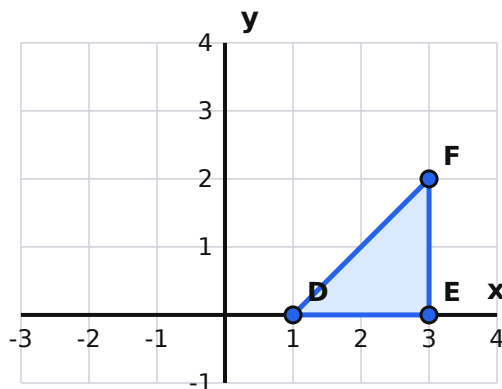
Exercise 7 - Rotate 180 degrees

Rotate $(-3, 4)$ by 180° about the origin.

Exercise 8 - Rotate clockwise

Rotate $(3, 1)$ by 90° clockwise about the origin.

Exercise 9 - Rotate a triangle



Triangle DEF.

Rotate triangle DEF by 90° counterclockwise about the origin. Give the image vertices.

Exercise 10 - Identify the transformation

The point $M(2,6)$ is mapped to $M'(2,-6)$. Which transformation could this be?

Exercise 11 - Lengths are preserved

Segment AB has endpoints $A(1,1)$ and $B(4,1)$. After a translation 3 right and 2 down, what is the length of $A'B'$?

Exercise 12 - Properties preserved

A triangle with angles 40° , 60° and 80° is reflected. What are the angles of the image? Explain.

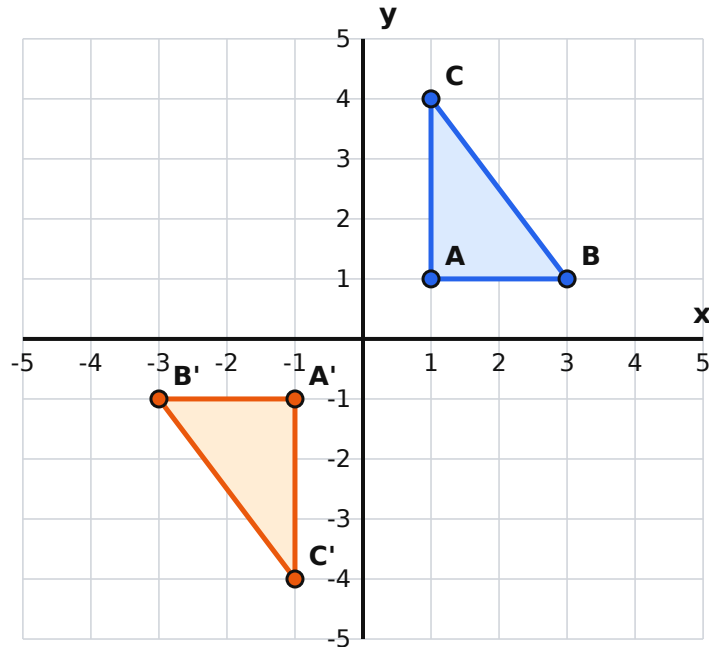
Exercise 13 - Translation then reflection

Translate $(2,3)$ right 4, then reflect the result across the x-axis.

Exercise 14 - Reflection then translation

Reflect $(-2,1)$ across the y-axis, then translate it up 3.

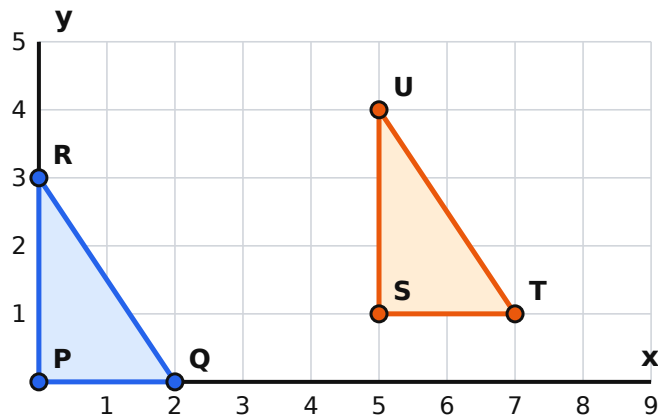
Exercise 15 - Describe the sequence



Triangle ABC and its image.

Triangle $A'B'C'$ is the image of ABC . Describe one transformation that maps ABC to $A'B'C'$.

Exercise 16 - Show congruence



Two triangles.

Show that the two triangles are congruent by describing a transformation.

Exercise 17 - Park statue

On a map of a park, a statue is at $(-4, 3)$ and the river runs along the y -axis. A matching statue is placed on the other side of the river as a mirror image. Where does it go?

Exercise 18 - Robot vacuum

A robot vacuum starts at $(2,3)$ in a room map. It moves 5 units left and 4 units down. Where does it stop, and what transformation describes the move?

Exercise 19 - Logo rotation

A school logo has a vertex at $(4,2)$. The logo is rotated 90° counterclockwise about the origin. Find the new location of the vertex.

Exercise 20 - Which changes orientation

Which transformations change the order of the vertices (the orientation) of a figure: translation, reflection or rotation? Explain.