

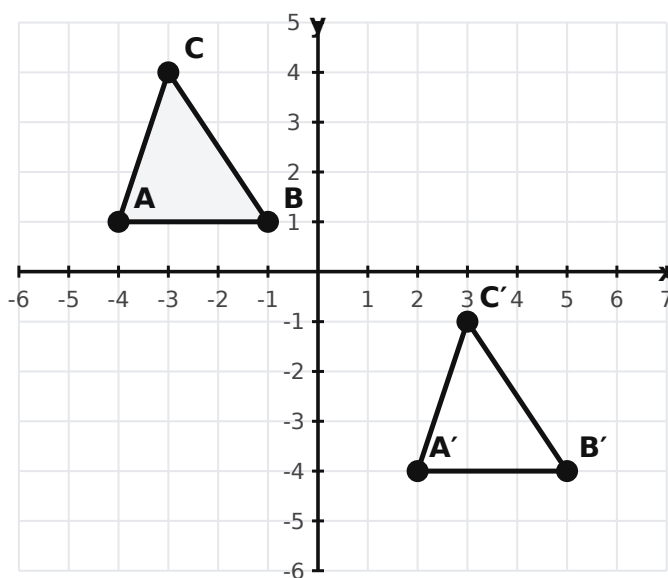
Geometry - Translations, Reflections and Rotations - Test Answer Key

Common Core G-CO.A.2, G-CO.A.4, G-CO.A.5 · maths-pdf.fr/en/

Use this answer key and scoring guide for the transformations test. Each solution shows the full work, and the scoring note tells how the points are split between method and final answer. Partial credit is listed so that grading stays consistent from one paper to the next.

Geometry · Common Core State Standards: **G-CO.A.2, G-CO.A.4, G-CO.A.5**

Question 1 - Translation [2 pts]



Triangle and image.

$A'(2, -4)$, $B'(5, -4)$, $C'(3, -1)$

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Scoring: 1 point for correct use of the rule, 1 point for all three vertices correct (deduct 1 if one is wrong).

Question 2 - Reflection [2 pts]

- a. $(-5, -2)$
- b. $(2, -5)$

(a) (-5, -2); (b) (2, -5)

Scoring: 1 point per part.

Question 3 - Rotation [3 pts]

- a. $(-7, 3)$
- b. $(-3, -7)$
- c. $(7, -3)$

(a) (-7, 3); (b) (-3, -7); (c) (7, -3)

Scoring: 1 point per part.

Question 4 - Find the rule [2 pts]

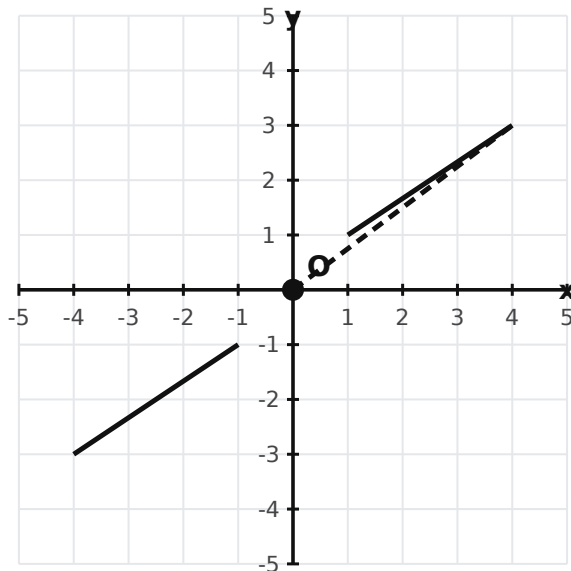
$3 - (-2) = 5$ and $1 - 6 = -5$, so the rule is (x, y) maps to $(x+5, y-5)$.

$$L' = (5, -5)$$

$(x + 5, y - 5)$; $L'(5, -5)$

Scoring: 1 point for the rule, 1 point for L' .

Question 5 - Identify the transformation [2 pts]



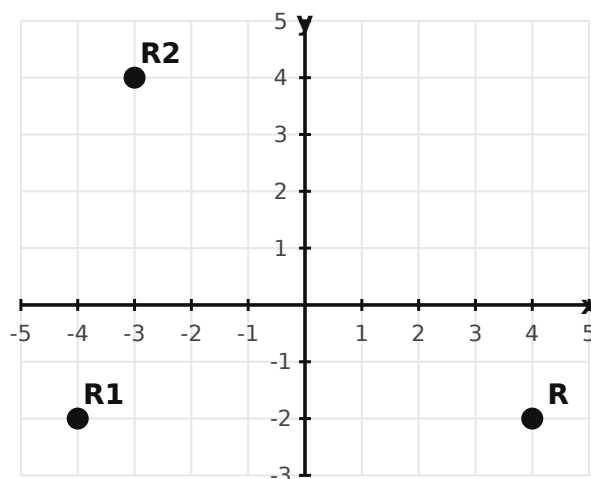
Both endpoints are the same distance from O on opposite sides.

Each coordinate changes sign: $(1,1)$ maps to $(-1,-1)$ and $(4,3)$ maps to $(-4,-3)$. This is (x,y) maps to $(-x,-y)$.

A rotation of 180° about the origin

Scoring: 1 point for the correct name, 1 point for justification using the coordinates.

Question 6 - Composition [2 pts]



R, then R1 after the reflection, then R2.

$(4,-2)$ maps to $(-4,-2)$ maps to $(-3,4)$

$(-3, 4)$

Scoring: 1 point for the reflection, 1 point for the translation.

Question 7 - Order matters [2 pts]

First student: $(2,1)$ maps to $(-1,2)$ maps to $(-1,-2)$.

Second student: $(2,1)$ maps to $(2,-1)$ maps to $(1,2)$.

No, the images $(-1, -2)$ and $(1, 2)$ are different

Scoring: 1 point for each correct image, deduct nothing for a correct conclusion but state it.

Question 8 - Rigid motions [2 pts]

The image has $P'Q' = 5$, $Q'R' = 12$ and $m\angle Q' = 90^\circ$.

Reflections and translations are rigid motions, so they preserve distance and angle measure.

Scoring: 1 point for the three values, 1 point for the reason.

Question 9 - Mirror line [3 pts]

The point is 4 units from the line, so P' is 4 units on the other side: $3 - 4 = -1$. So $P' = (-1, 4)$.

The distance between the point and P' is $7 - (-1) = 8$.

$P'(-1, 4)$; distance 8

Scoring: 1 point for the x-coordinate, 1 point for the full point, 1 point for the distance.

Total
20 points