

Geometry - Translations, Reflections and Rotations - Test

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

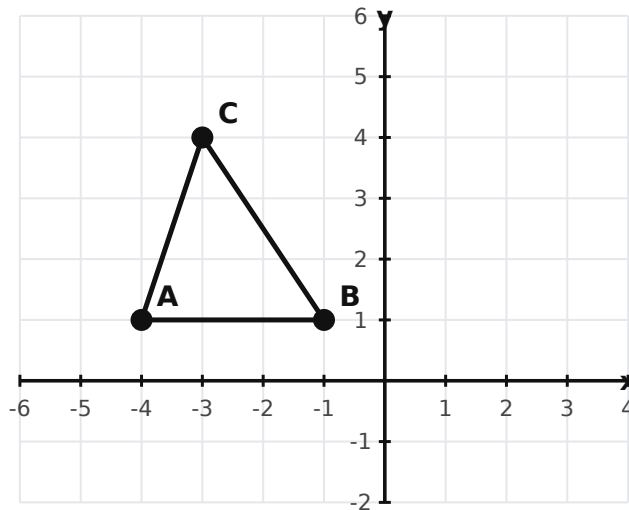
Name: _____ Class: _____ Date: ____/____/____

This 45-minute test checks coordinate rules for translations, reflections and rotations and for rigid motions. It has 9 questions worth 20 points in total. Show every step of the work, label diagrams, and include units where they apply. Calculators are allowed unless the teacher says otherwise.

About this test

- Grade: Geometry
- Chapter: Translations, Reflections and Rotations
- Standards: G-CO.A.2, G-CO.A.4, G-CO.A.5
- Time: 45 minutes
- Total: 20 points

Question 1 - Translation [2 pts]



Triangle ABC.

Translate triangle ABC by the rule $(x, y) \rightarrow (x + 6, y - 5)$. Write the coordinates of A', B' and C'.

Question 2 - Reflection [2 pts]

- a. Reflect $(-5, 2)$ across the x -axis. (1 point)
- b. Reflect $(-5, 2)$ across the line $y = x$. (1 point)

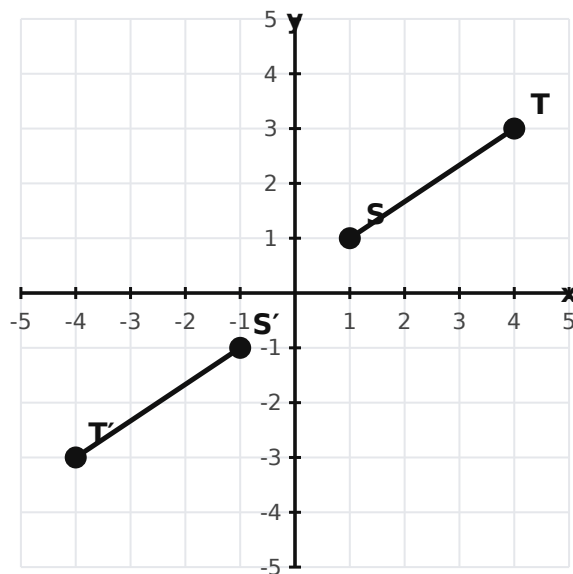
Question 3 - Rotation [3 pts]

- a. Rotate $(3, 7)$ by 90° counterclockwise about the origin. (1 point)
- b. Rotate $(3, 7)$ by 180° about the origin. (1 point)
- c. Rotate $(3, 7)$ by 90° clockwise about the origin. (1 point)

Question 4 - Find the rule [2 pts]

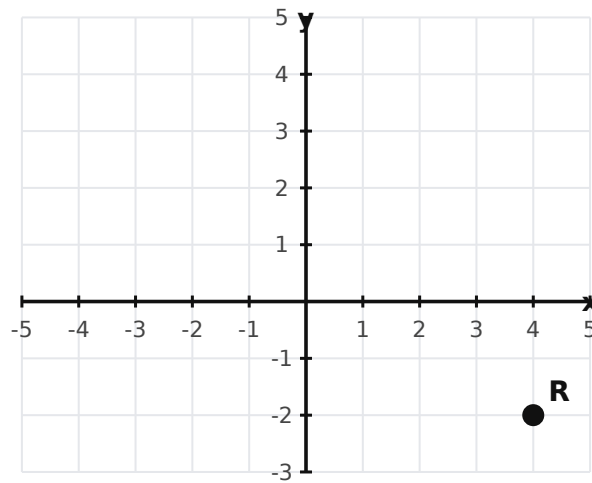
A translation maps $K(-2, 6)$ to $K'(3, 1)$. Write the rule of the translation and use it to find the image of $L(0, 0)$.

Question 5 - Identify the transformation [2 pts]



Segment ST and its image $S'T'$.

Name the rigid motion that maps ST to $S'T'$ and justify your answer with coordinates.

Question 6 - Composition [2 pts]

Point R.

Point R(4, -2) is reflected across the y-axis and then translated by $(x, y) \rightarrow (x + 1, y + 6)$. Find the final image.

Question 7 - Order matters [2 pts]

Point M(2, 1) is rotated 90° counterclockwise about the origin and then reflected across the x-axis. Another student reflects first and then rotates. Do the two students get the same image? Show the work.

Question 8 - Rigid motions [2 pts]

Triangle PQR has $PQ = 5$, $QR = 12$ and $m\angle Q = 90^\circ$. It is reflected and then translated. State PQ , QR and $m\angle Q$ for the image triangle and explain why.

Question 9 - Mirror line [3 pts]

The point (7, 4) is reflected across the vertical line $x = 3$ to give P' . Find P' , and find the distance between the point and P' .