

Geometry - Translations, Reflections and Rotations - Quiz

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

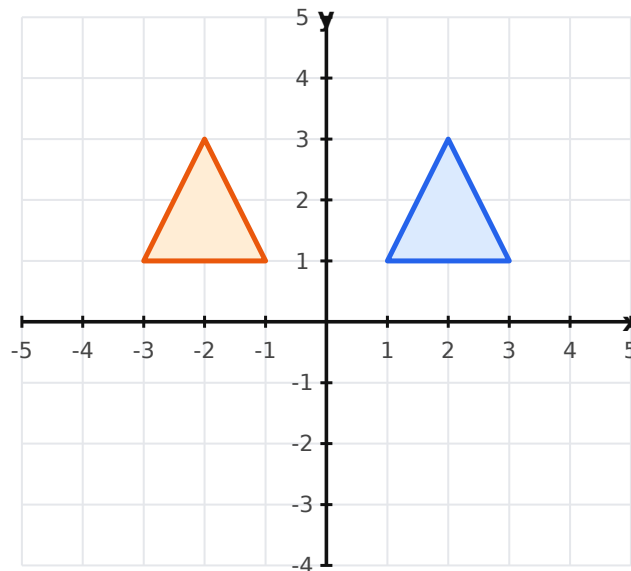
Name: _____ Class: _____ Date: ____/____/____

Test your understanding of translations, reflections and rotations with this 10-question multiple-choice quiz. Each question has one correct answer, and the explanation after it names the typical mistake behind the wrong choices. Take it after the lesson or before the test.

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

Questions

Question 1



Which transformation maps the blue triangle to the orange triangle?

- A. Reflection across the x-axis
- B. Rotation of 90 degrees counterclockwise
- C. Translation 4 units left
- D. Reflection across the y-axis

Question 2

What is the image of $(3, -5)$ after a reflection across the x-axis?

- A. $(-3, -5)$
- B. $(3, 5)$
- C. $(-3, 5)$
- D. $(-5, 3)$

Question 3

What is the image of $(2, 6)$ after a 90 degree counterclockwise rotation about the origin?

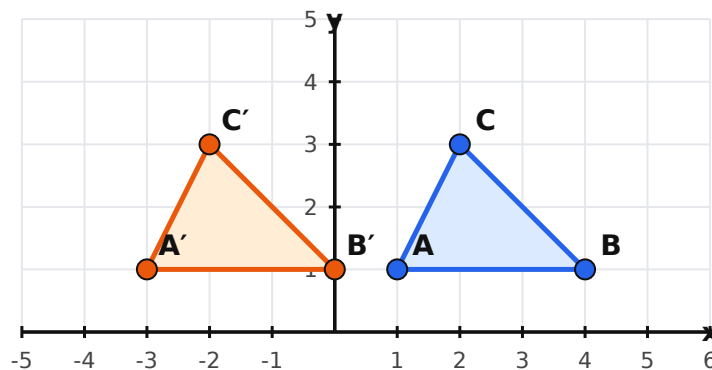
- A. $(-6, 2)$
- B. $(6, -2)$
- C. $(-2, -6)$
- D. $(6, 2)$

Question 4

A translation maps $(1, 4)$ to $(6, 0)$. What is the rule?

- A. $(x - 5, y + 4)$
- B. $(x + 5, y - 4)$
- C. $(x + 5, y + 4)$
- D. $(x + 6, y)$

Question 5



The blue triangle is translated to the orange triangle. What is the rule?

- A. $(x - 4, y)$
- B. $(x + 4, y)$
- C. $(x, y - 4)$
- D. $(x - 4, y - 4)$

Question 6

Which of these is NOT a rigid motion?

- A. A reflection across a line
- B. A 45 degree rotation about a point
- C. A dilation with scale factor 2
- D. A translation 3 units up

Question 7

A point is rotated 180 degrees about the origin. Which describes the image of $(-4, 9)$?

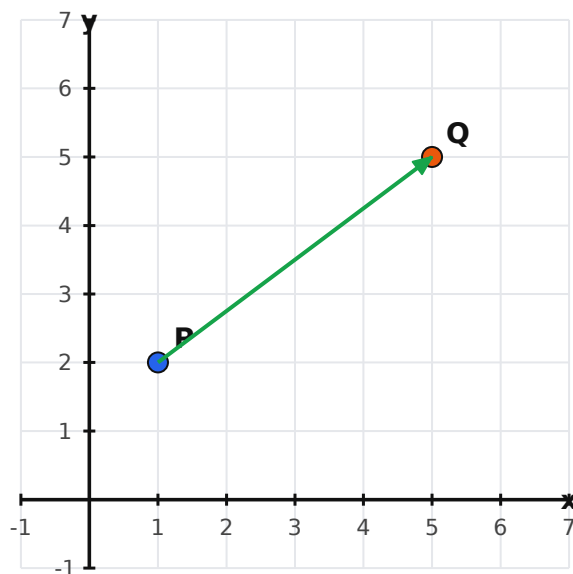
- A. $(4, -9)$
- B. $(-4, -9)$
- C. $(4, 9)$
- D. $(9, -4)$

Question 8

Reflect $(6, 1)$ across the line $x = 2$. What is the image?

- A. $(-6, 1)$
- B. $(2, 1)$
- C. $(6, 3)$
- D. $(-2, 1)$

Question 9



Point $P(1, 2)$ is translated to $Q(5, 5)$. What is the image of $(0, 0)$ under the same translation?

- A. (5, 5)
- B. (1, 2)
- C. (4, 3)
- D. (-4, -3)

Question 10

A point is reflected across the x-axis and then across the y-axis. Which single transformation does the same thing?

- A. A reflection across the line $y = x$
- B. A rotation of 180 degrees about the origin
- C. A translation
- D. A rotation of 90 degrees

Answers

1. **D** – Every x-coordinate changes sign and the y-coordinates stay the same, which is a reflection across the y-axis. A translation would not flip the triangle.
2. **B** – Reflecting across the x-axis changes only the sign of y. Changing x is a reflection across the y-axis.
3. **A** – The rule is (x, y) to $(-y, x)$. The point $(6, -2)$ comes from a clockwise turn.
4. **B** – Subtract the starting coordinates from the image: $6 - 1 = 5$ and $0 - 4 = -4$. Reversing the subtraction gives the opposite rule.
5. **A** – Every point moves 4 units left and 0 vertically. A plus sign would move the figure right.
6. **C** – Rigid motions preserve distance. A dilation with scale factor 2 doubles lengths, so it is not rigid.
7. **A** – A 180 degree rotation changes the sign of both coordinates. Changing one sign is a reflection.
8. **D** – The point is 4 units from the line, so the image is 4 units on the other side: $2 - 4 = -2$. Using the y-axis instead gives $(-6, 1)$.
9. **C** – The rule is $(x + 4, y + 3)$, so $(0, 0)$ goes to $(4, 3)$. The point $(-4, -3)$ is the result of the inverse translation.
10. **B** – The x-axis reflection changes y and the y-axis reflection changes x, so both signs change, which is a 180 degree rotation about the origin.

Remember

- A translation moves every point the same distance in the same direction: (x, y) to $(x + a, y + b)$.
- A reflection across the x-axis sends (x, y) to $(x, -y)$; across the y-axis it sends (x, y) to $(-x, y)$.
- A 90 degree counterclockwise rotation about the origin sends (x, y) to $(-y, x)$.
- Rigid motions preserve distance and angle measure, so the image is congruent to the preimage.
- When transformations are combined, the order matters.