

Y5 Reflection Translation

KS2 Y5 Maths · Follows the national curriculum

Name _____ Class _____ Date _____

1. Worked example

Point (3, 4) is translated 5 right and 2 down. Where does it end up?

Step 1 · Right adds to the x-coordinate

$$3 + 5 = 8$$

Step 2 · Down subtracts from the y-coordinate

$$4 - 2 = 2$$

Answer: (8, 2)

Check: Count the squares on a grid to check ✓

2. Now try one with the steps

Point (2, 3) is reflected in the vertical mirror line $x = 5$. Where is the image?

Step 1 · Distance from the mirror

Step 2 · The image is the same distance on the other side

Step 3 · A vertical mirror does not change the y-coordinate

Answer:

3. Practice

Have a go at each one. There is space underneath to work it out.

1. Translate (2, 5) 3 squares right. Where is it now?

2. Translate (6, 4) 2 squares down. Where is it now?

3. Translate (1, 7) 4 right and 3 down.

4. Describe the translation from (2, 2) to (7, 5).

5. Reflect (3, 4) in the vertical line $x = 5$.

6. Reflect (1, 6) in the vertical line $x = 4$.

7. Reflect (5, 2) in the horizontal line $y = 4$.

8. After a translation, is the shape bigger, smaller or the same size?

9. A point on the mirror line, such as (5, 3) on $x = 5$, is reflected in that line. Where is its image?

10. A square has corners (1, 1), (3, 1), (3, 3) and (1, 3). It is translated 4 right and 2 up. Write the new corners.

11. Triangle (2, 1), (4, 1), (2, 4) is reflected in $x = 6$. Write the new corners.

12. A point moves from (8, 6) to (3, 9). Describe the translation.

13. Point P is reflected in the line $y = 5$ and lands on (2, 9). Where was P?

14. Jo says reflecting a shape in a mirror line is the same as it. Is she right? Explain.

4. Before you hand it in

Translating (3, 4) '5 right' to (3, 9).

Left and right change x (the first number). Up and down change y (the second number). $(3, 4) \rightarrow (8, 4)$.

Reflecting (2, 3) in $x = 5$ as (3, 3), one square past the line.

Count the squares from the point to the mirror (3), then count the same number on the other side: (8, 3).

Thinking a shape gets bigger or changes when it is reflected or translated.

Reflections and translations do not change the size or shape; only the position (and for a reflection, which way it faces) changes.