Answers and talk notes

Reflect Points Across Axes

What your student is learning

Tonight we reflect points across the x-axis and the y-axis. A reflection is a flip, like a mirror image.

Answers

Ask your student to explain before you look.

1. **A.** The x-coordinate. The x-coordinate changes sign: the y-axis is vertical, so the point flips left or right.
2. **B.** (–5, 2). Over the y-axis, x changes sign: (–5, 2).
3. **D.** (–3, –4). Over the x-axis, y changes sign: (–3, –4).
4. **A.** (–1, –6). Over the y-axis, x changes sign: (–1, –6).
5. **B.** (7, 3). Reflecting again undoes the flip, so the original point was (7, 3).
6. **C.** (2, 3) and (–2, 3). (2, 3) and (–2, 3) have opposite x-coordinates and the same y-coordinate.

Talk about it

Which axis is the mirror? Which coordinate changes sign and which stays the same?

Home mission

Stand a small toy 3 spoon-lengths in front of a mirror. How far behind the mirror does its twin seem to be? Move the toy to 5 spoon-lengths. What happens to the twin?

When they are stuck, ask

- Which line are we flipping over, the x-axis or the y-axis?
- Over the x-axis the y changes; over the y-axis the x changes. Which one is it here?
- Only one number changes its sign. Which number stays exactly the same?

Try not to say

- When you reflect, both numbers change their signs.
- Reflecting over the x-axis changes the x-coordinate.
- A reflection moves the point closer to the line.