

Lesson 7-7 • Group 2

Reinforce Understanding

7.7 Small Group • Group 2

I can draw polygons from their vertex coordinates on the coordinate plane, and use coordinates to find side lengths and solve perimeter and area problems, explain what each part stands for, and build one for a situation I have not seen before.

Worked model

A rectangle has vertices at $(-8.5, 7.5)$, $(5.5, 7.5)$, $(5.5, -3.5)$, and $(-8.5, -3.5)$. Find its perimeter.

1. Plot the four vertices and connect them in order to draw the rectangle.
2. Top side: the y-coordinates match, so use the x-values: $-8.5 + 5.5 = 14$
3. Left side: the x-coordinates match, so use the y-values: $7.5 + -3.5 = 11$
4. Perimeter adds all four sides: $14 + 11 + 14 + 11 = 50$

Answer: The rectangle measures 14 units by 11 units, so its perimeter is 50 units.

Practice

Complete each exercise. Show the reasoning that supports your answer.

1. Find the distance between each pair of vertices.

Complete the table. Show how you found each value.

Vertices	Shared coordinate	Distance (units)
$(-4, 3)$ and $(5, 3)$		
$(5, 3)$ and $(5, -4)$		
$(-2, -1)$ and $(6, -1)$		

Show your work

2. Plot the vertices of rectangle PQRS, then use the coordinates to find its perimeter.

Plot and label each point on the grid.

Show your thinking

3. A rectangle has vertices $(-3, 2)$, $(4, 2)$, $(4, -1)$, $(-3, -1)$. What is its perimeter?

Circle the letter of the best answer. Show how you know.

- A. 10 units
- B. 13 units
- C. 20 units
- D. 21 units