LESSON MAKER PRO

Coordinate Creations

Find lengths, area, and perimeter on a coordinate plane.

GRADE 6 · 6.GM.A.25

6.GM.A.25 "Graph polygons in the coordinate plane given coordinates of the vertices to solve real-world and mathematical problems. a. Determine missing vertices of a rectangle with the same x-coordinate or the same y-coordinate when graphed in the..."

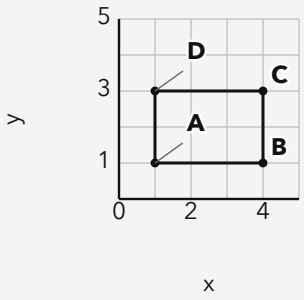
NAME _____ DATE _____

READ THE COORDINATES

For a horizontal side, subtract the x-coordinates to find its length. For a vertical side, subtract the y-coordinates. Add side lengths for perimeter, and use rectangles to find area.

WORKED EXAMPLE

Find the area and perimeter of rectangle ABCD.



1. Horizontal length: 4 - 1 = 3 units.
2. Vertical length: 3 - 1 = 2 units.
3. Area: 3 × 2 = 6 square units.
4. Perimeter: 3 + 2 + 3 + 2 = 10 units.

Answer: Area: 6 square units; perimeter: 10 units.

PRACTICE 4 problems

1 Rectangle ABCD has A(2,2), B(7,2), and C(7, 5). Find D.

ANSWER _____

2 Find the length of the side from P(2,8) to Q(9,8).

ANSWER _____

3 Rectangle ABCD has A(2,2), B(8,2), C(8,7), and D(2,7). Find its area and perimeter.

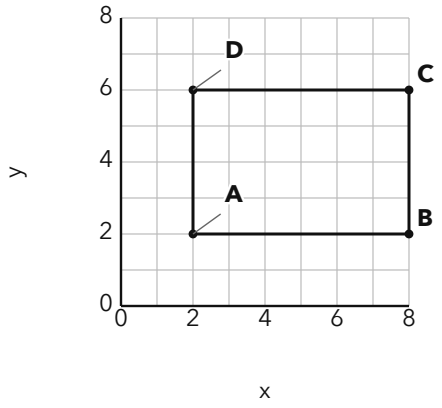
ANSWER _____

4 Polygon ABCDEF has A(2,2), B(9,2), C(9,5), D(6,5), E(6,8), and F(2,8). Find its area and perimeter.

ANSWER _____

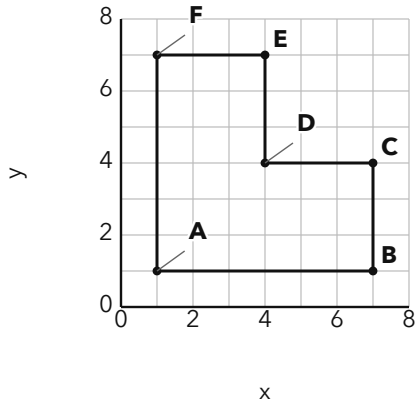
APPLY IT Show your work

1 Students mark the space shown for a game at a school fair. Each grid unit is 1 foot. How many square feet does the space cover?



ANSWER _____

2 A school club plans lights around the edge of the stage shown. Each grid unit is 1 foot. How many feet of lights are needed?



ANSWER _____

CHALLENGE One step up

Plot and connect A(2,2), B(9,2), C(9,7), D(5,7), E(5,5), and F(2,5) in order. Find the area and perimeter. Explain how you found the area.

WORK SPACE AND ANSWER

ANSWER KEY

Coordinate Creations

GRADE 6 · 6.GM.A.25

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Rectangle ABCD has A(2,2), B(7,2), and C(7,5). Find D.	**D(2,5)**
2	Find the length of the side from P(2,8) to Q(9,8).	**7 units**
3	Rectangle ABCD has A(2,2), B(8,2), C(8,7), and D(2,7). Find its area and perimeter.	**Area: 30 square units; perimeter: 22 units.**
4	Polygon ABCDEF has A(2,2), B(9,2), C(9,5), D(6,5), E(6,8), and F(2, 8). Find its area and perimeter.	**Area: 33 square units; perimeter: 26 units.**

PART 2 · APPLY IT

1. **24 square feet** The space is 6 feet by 4 feet, so its area is 6 × 4 = 24 square feet.
2. **24 feet** The six side lengths are 6, 3, 3, 3, 3, and 6 feet. Their sum is 24 feet.

CHALLENGE

Area: 29 square units; perimeter: 24 units. A 7-by-3 rectangle and a 4-by-2 rectangle have areas of 21 and 8 square units, giving 29 square units in all.

For the challenge, accept any correct way to split or enclose the polygon to find its area.