LESSON MAKER PRO

# Rectangle Match-Up

*Compare perimeter and area in rectangles.*

**GRADE 4 · 4.MG.3.e**

**4.MG.3.e** "Identify and represent rectangles with the same perimeter and different areas or with the same area and different perimeters."

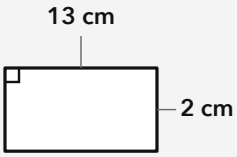
NAME _____ DATE _____

## PERIMETER AND AREA

Add the length and width, then double the sum to find perimeter. Multiply length by width to find area. Rectangles can have the same perimeter but different areas, or the same area but different perimeters.

### WORKED EXAMPLE

Use the rectangle. Find its perimeter and area.

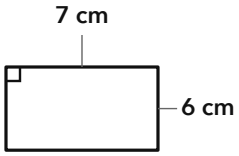



1. Add the side lengths: 13 + 2 = 15 cm.
2. Double the sum: 2 × 15 = 30 cm.
3. Multiply the side lengths: 13 × 2 = 26 square cm.

**Answer: Perimeter = 30 cm. Area = 26 square cm.**

## PRACTICE 4 problems

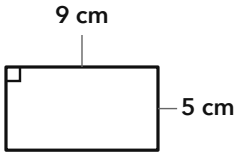
**1** Use the rectangle. Find its perimeter and area.




**ANSWER** _____

_____

**2** Use the rectangle. Write one different whole-number rectangle with the same perimeter. Then find its area.




**ANSWER** _____

_____

**3** Rectangles 5 cm by 9 cm and 3 cm by 15 cm have the same area. Find both perimeters. Which perimeter is greater?

**ANSWER** _____

_____

**4** Which two rectangles have the same perimeter but different areas? A: 10 cm by 4 cm, B: 9 cm by 5 cm, C: 6 cm by 6 cm.

**ANSWER** _____

## APPLY IT Show your work

**1** Kai makes two rectangular robot-course borders with 24 feet of tape. One is 11 feet by 1 foot. The other is 7 feet by 5 feet. Which course has more space inside? How much more?

WORK SPACE

**ANSWER** _____

**2** A game-club poster needs 48 square inches of space. Design A is 6 inches by 8 inches. Design B is 4 inches by 12 inches. Which design needs less border? How many inches less?

WORK SPACE

**ANSWER** _____

## CHALLENGE One step up

A rectangle has an area of 60 square units. Write two different whole-number side pairs that make this area. Find both perimeters. In one sentence, explain why the areas match but the perimeters differ.

WORK SPACE AND ANSWER

**ANSWER KEY** # Rectangle Match-Up

**GRADE 4 · 4.MG.3.e**

## PART 1 · PRACTICE

| # | PROBLEM | ANSWER |
|---|---|---|
| 1 | Use the rectangle. Find its perimeter and area. | **Perimeter = 26 cm. Area = 42 square cm.** |
| 2 | Use the rectangle. Write one different whole-number rectangle with the same perimeter. Then find its area. | **Possible rectangle: 10 cm by 4 cm. Area = 40 square cm.** |
| 3 | Rectangles 5 cm by 9 cm and 3 cm by 15 cm have the same area. Find both perimeters. Which perimeter is greater? | **28 cm and 36 cm. The 3 cm by 15 cm rectangle has the greater perimeter.** |
| 4 | Which two rectangles have the same perimeter but different areas? A: 10 cm by 4 cm, B: 9 cm by 5 cm, C: 6 cm by 6 cm. | **A and B.** |

## PART 2 · APPLY IT

1. **The 7 ft by 5 ft course has 24 square feet more space inside.** The areas are 11 square feet and 35 square feet. Subtract: 35 − 11 = 24.
2. **Design A needs 4 inches less border.** Design A has perimeter 28 inches. Design B has perimeter 32 inches, so A needs 4 fewer inches.

## CHALLENGE

**Possible pairs: 6 units by 10 units, perimeter 32 units; 5 units by 12 units, perimeter 34 units. Both length × width products equal 60, but their side sums differ.**

For problem 2, accept any different whole-number rectangle with perimeter 28 cm and its correct area. For the challenge, accept any two factor pairs of 60 with correct perimeters and a valid explanation.