Name _____   Date _____

1. Use Rectangles A and B to answer the questions below.

4 cm

4 cm | **Rectangle A**

5 cm
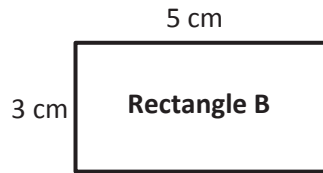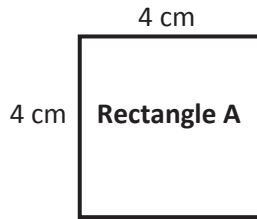
3 cm | **Rectangle B**

a. What is the perimeter of Rectangle A?
$p = 4 \times 4\,cm$
$p = 16\,cm$

b. What is the perimeter of Rectangle B?
$p = 3\,cm + 5\,cm + 3\,cm + 5\,cm$
$p = 16\,cm$

c. What is the area of Rectangle A?
$A = 4\,cm \times 4\,cm$
$A = 16\,cm^2$

d. What is the area of Rectangle B?
$A = 3\,cm \times 5\,cm$
$A = 15\,cm^2$

e. Use your answers to Parts (a–d) to help you explain the relationship between area and perimeter.

The answer in Parts (a-d) show us that there is no relationship between the area and perimeter of rectangles. Two rectangles can have the same perimeter, but have different areas.

Lesson 26: | Use rectangles to draw a robot with specified perimeter measurements, and reason about the different areas that may be produced.

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2. Each student in Mrs. Dutra's class draws a rectangle with whole number side lengths and a perimeter of 28 centimeters. Then, they find the area of each rectangle and create the table below.

Area in Square Centimeters	Number of Students
13	2
24	1
33	3
40	5
45	4
48	2
49	2

a. Give two examples from Mrs. Dutra's class to show how it is possible to have different areas for rectangles that have the same perimeter.

7 cm
7cm   7cm
7 cm

4 cm
10 cm
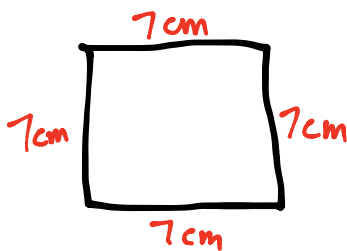
Both rectangles have a perimeter of 28 cm, but they have different areas.

b. Did any students in Mrs. Dutra's class draw a square? Explain how you know.

7 cm
7cm   7cm
7 cm
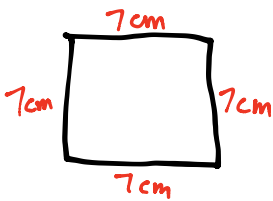
Two students drew a square. We know this because the only way to get 49 is 7×7, therefore, the shape with an area of 49cm² is a square.

c. What are the side lengths of the rectangle that most students in Mrs. Dutra's class made with a perimeter of 28 centimeters?

4 cm
10 cm
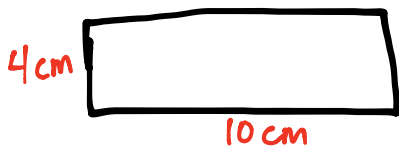
The most common rectangle drawn has a perimeter of 28cm and an area of 40 cm². this means the side lengths are 4cm and 10cm.

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Lesson 26:   Use rectangles to draw a robot with specified perimeter measurements, and reason about the different areas that may be produced.

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