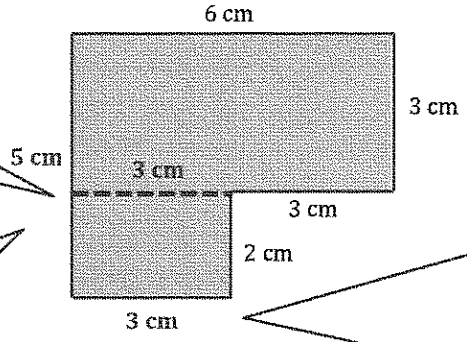
G3-M7-Lesson 17

1. The shape below is made up of rectangles. Label the unknown side lengths. Then, write and solve an equation to find the perimeter of the shape.

This is one way I can visualize how two rectangles fit together to make this shape.



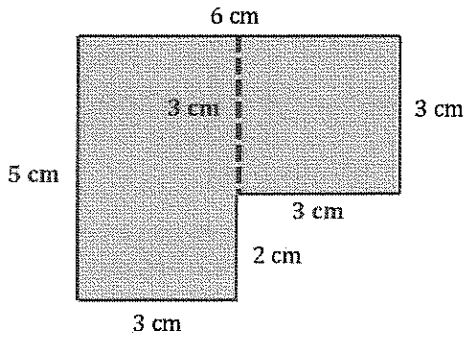
If I extended the line on the bottom to match the one at the top, it would be 6 cm because opposite sides of a rectangle are equal. Knowing that, I can subtract the part labeled 3 cm from 6 cm to find the length of the bottom line.

I can find this unknown side length by adding the known widths, 3 cm and 2 cm, to get 5 cm. This whole side length is 5 cm.

$$\begin{aligned} P &= (3 \times 3 \text{ cm}) + 2 \text{ cm} + 5 \text{ cm} + 6 \text{ cm} \\ &= 9 \text{ cm} + 13 \text{ cm} \\ &= 22 \text{ cm} \end{aligned}$$

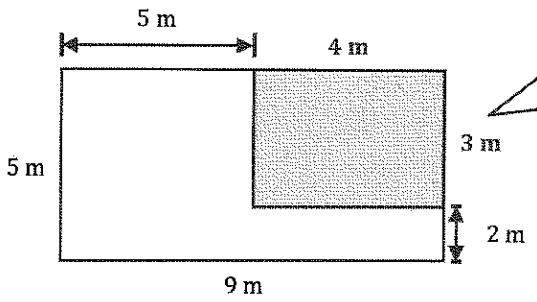
Now that I know the unknown side lengths of the shape, I can find the perimeter.

The perimeter of the shape is 22 cm



This is another way I can visualize how two rectangles fit together to make this shape. This time I see one rectangle and one square.

2. Label the unknown side lengths. Then, find the perimeter of the shaded rectangle.



I know the side lengths of the whole rectangle are 9 m and 5 m. In order to find the side lengths of the shaded part, I can subtract the total lengths from the known parts.
$9\text{ m} - 5\text{ m} = 4\text{ m}$, and $5\text{ m} - 2\text{ m} = 3\text{ m}$.

$$\begin{aligned} P &= (2 \times 4\text{ cm}) + (2 \times 3\text{ cm}) \\ &= 8\text{ cm} + 6\text{ cm} \\ &= 14\text{ cm} \end{aligned}$$

The perimeter of the shaded rectangle is 14 cm.

Now that I know the side lengths of the shaded part, I can find the perimeter. I know from the question that the shaded part is a rectangle. So it's opposite sides are equal.