

Objectives:

- Calculate the area and perimeter of shapes made from rectangles.
- Know and use the formula for calculating the area of a rectangle.

Vocabulary:

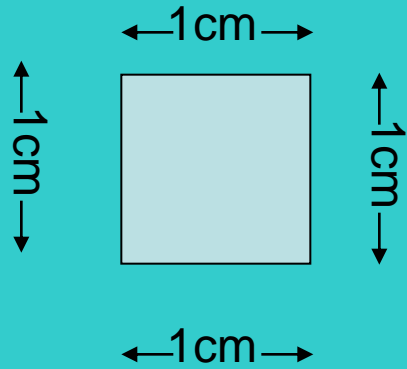
area

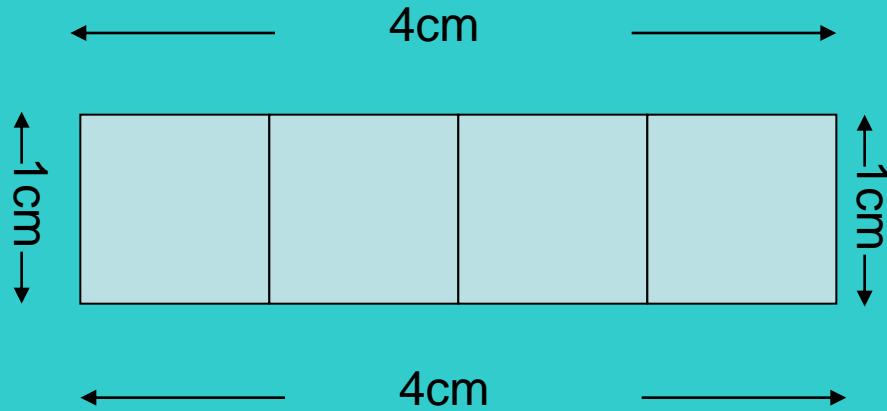
perimeter

cm²

cm

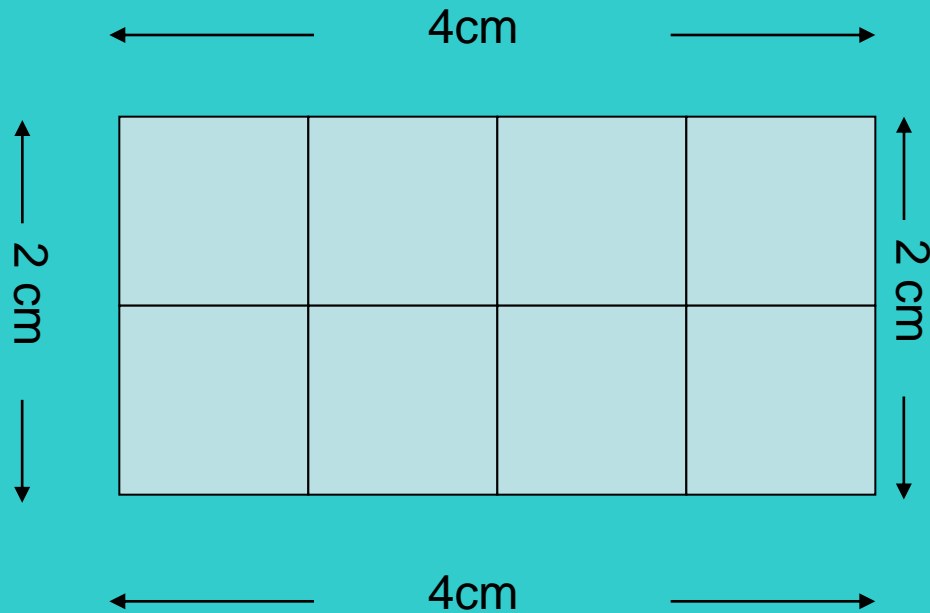
Perimeter





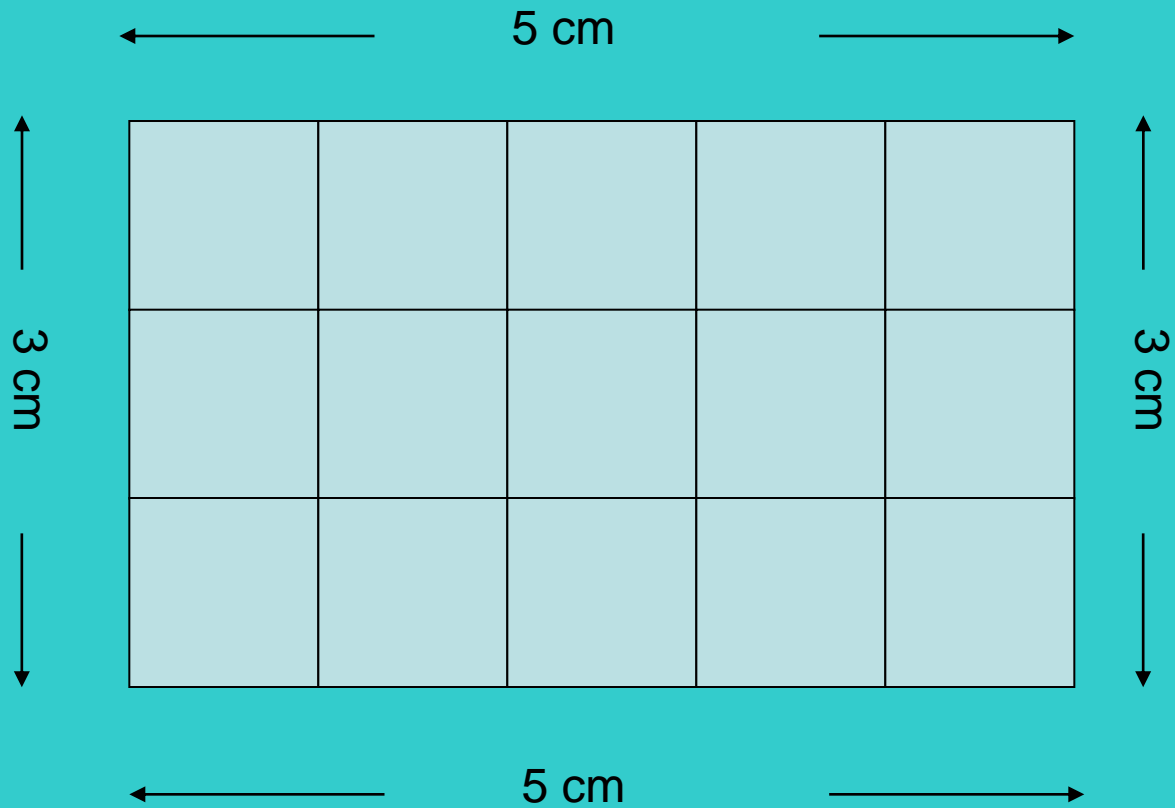
$$\text{Perimeter} = 4\text{cm} + 1\text{cm} + 4\text{cm} + 1\text{cm}$$

$$\text{Perimeter} = 10\text{cm}$$



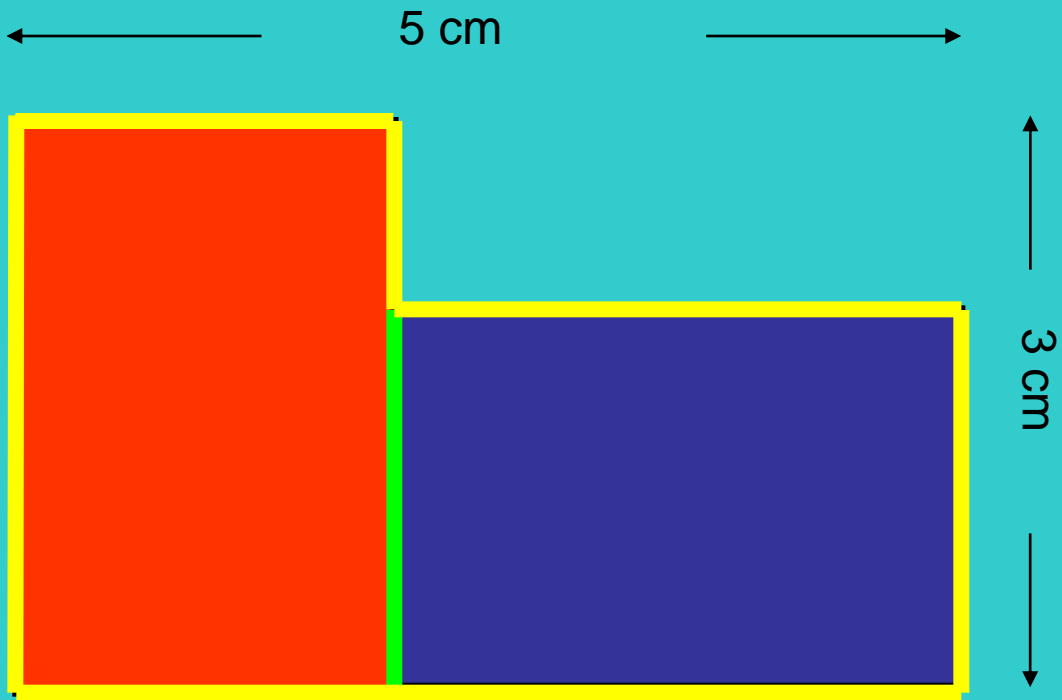
$$\text{Perimeter} = 4\text{cm} + 2\text{cm} + 4\text{cm} + 2\text{cm}$$

$$\text{Perimeter} = 12 \text{ cm}$$



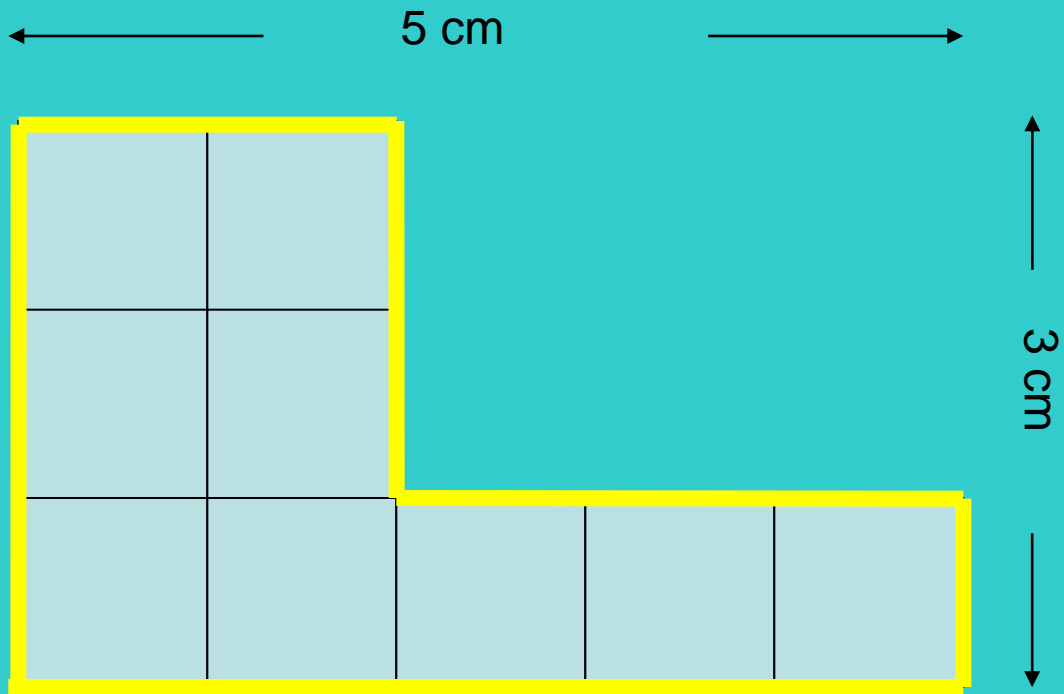
$$\text{Perimeter} = 5\text{cm} + 3\text{cm} + 5\text{cm} + 3\text{cm}$$

$$\text{Perimeter} = 16 \text{ cm}$$



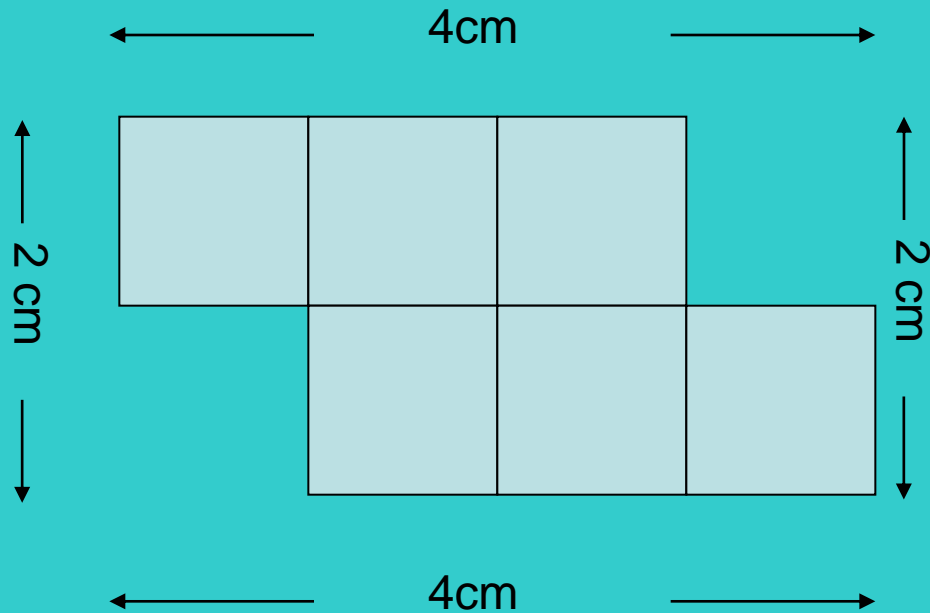
$$\text{Perimeter} = 2\text{cm} + 1\text{cm} + 3\text{cm} + 2\text{cm} + 5\text{cm} + 3\text{cm}$$

$$\text{Perimeter} = 16 \text{ cm}$$



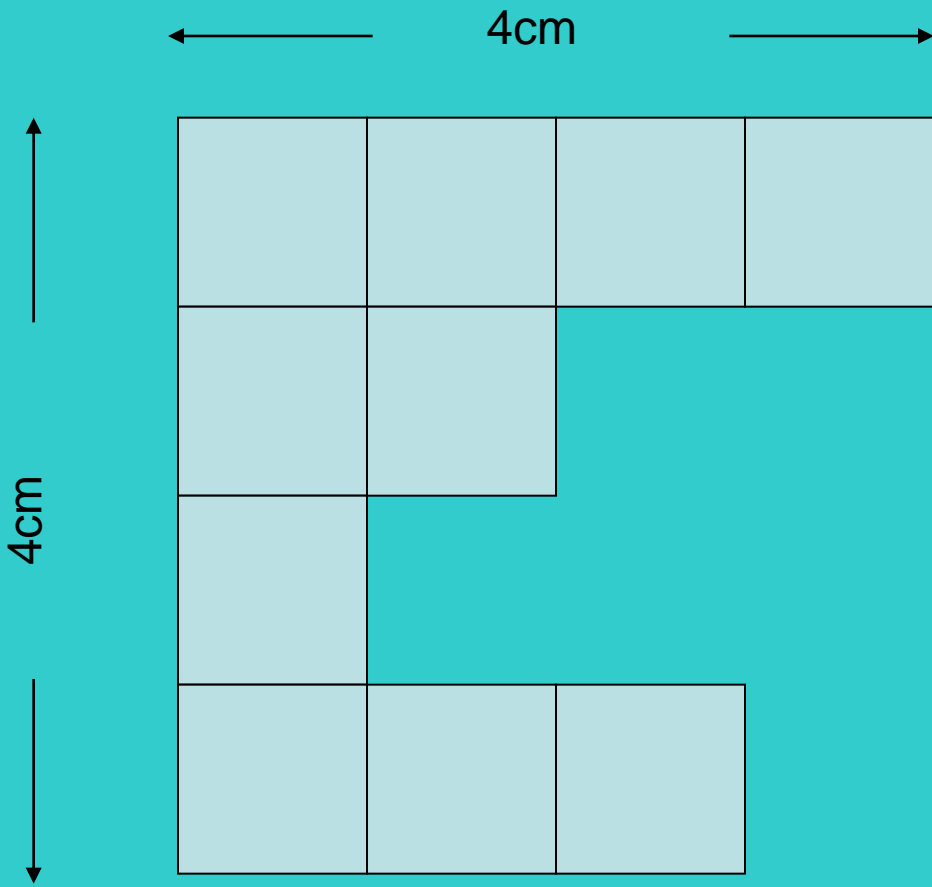
$$\text{Perimeter} = 2\text{cm} + 2\text{cm} + 3\text{cm} + 1\text{cm} + 5\text{cm} + 3\text{cm}$$

$$\text{Perimeter} = 16 \text{ cm}$$



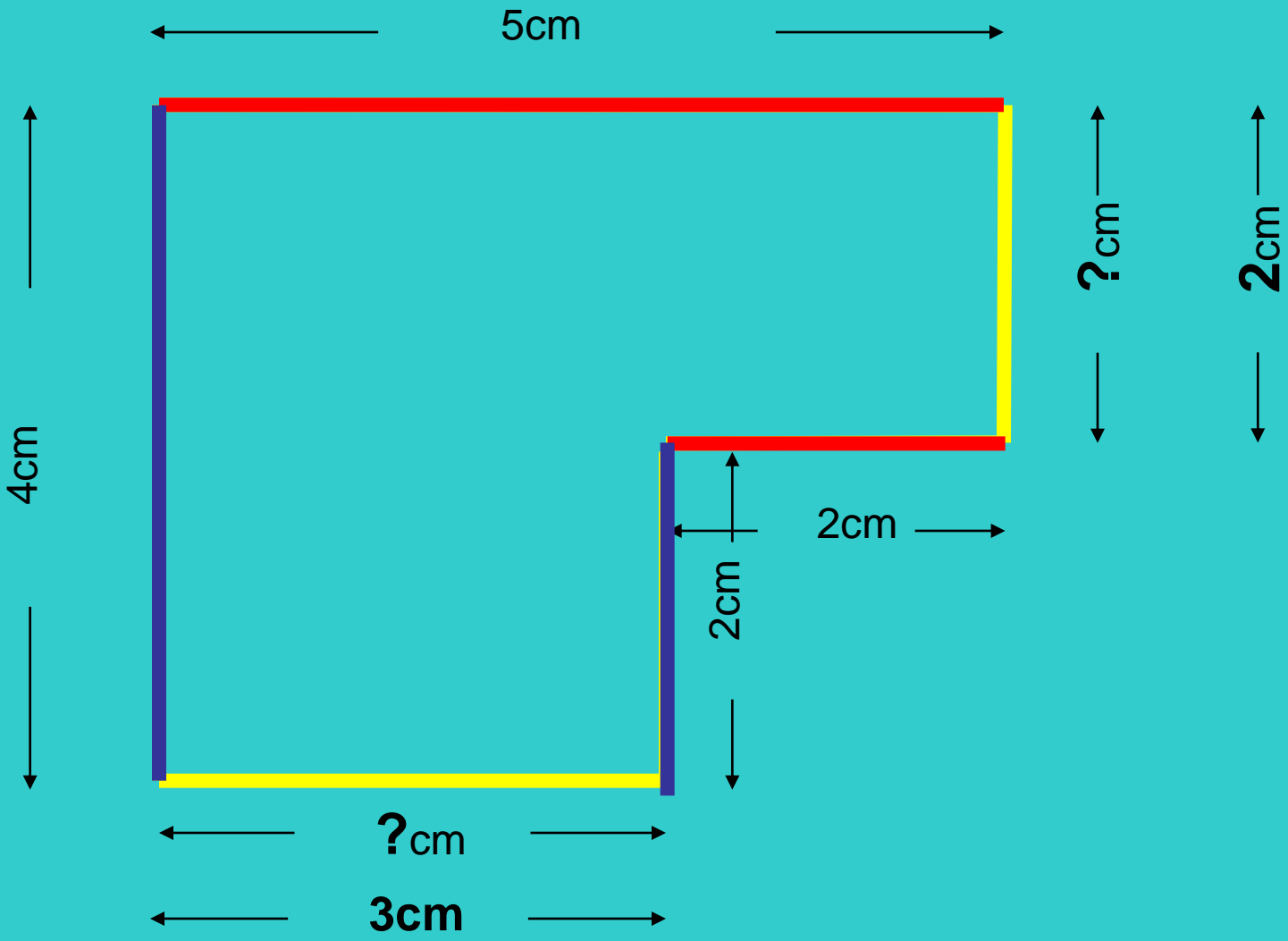
$$\text{Perimeter} = 3\text{cm} + 1\text{cm} + 1\text{cm} + 1\text{cm} + 3\text{cm} + 1\text{cm} + 1\text{cm} + 1\text{cm}$$

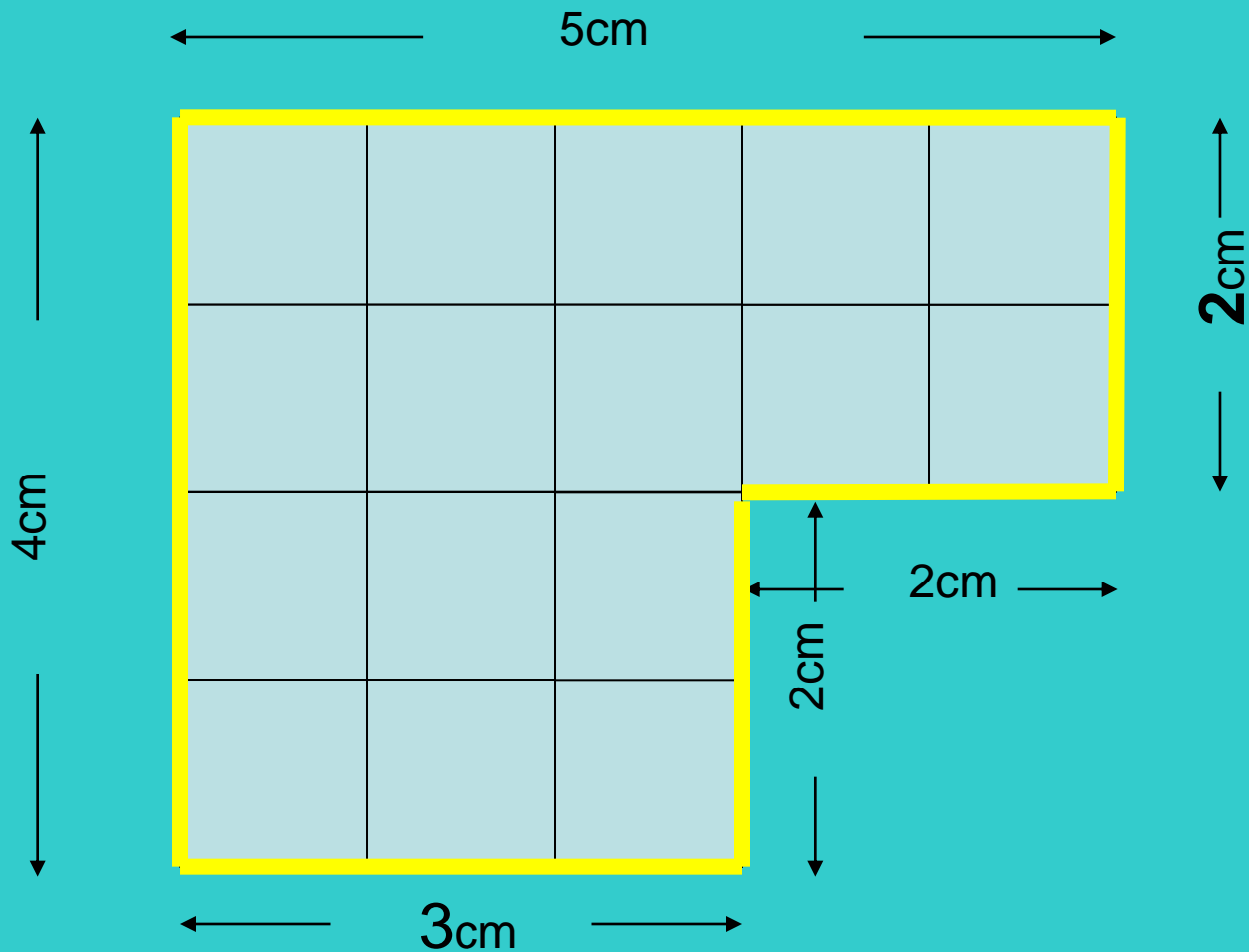
$$\text{Perimeter} = 12 \text{ cm}$$



$$\text{Perimeter} = 4\text{cm} + 1\text{cm} + 2\text{cm} + 1\text{cm} + 1\text{cm} + 1\text{cm} + 2\text{cm} + 1\text{cm} + 3\text{cm} + 4\text{cm}$$

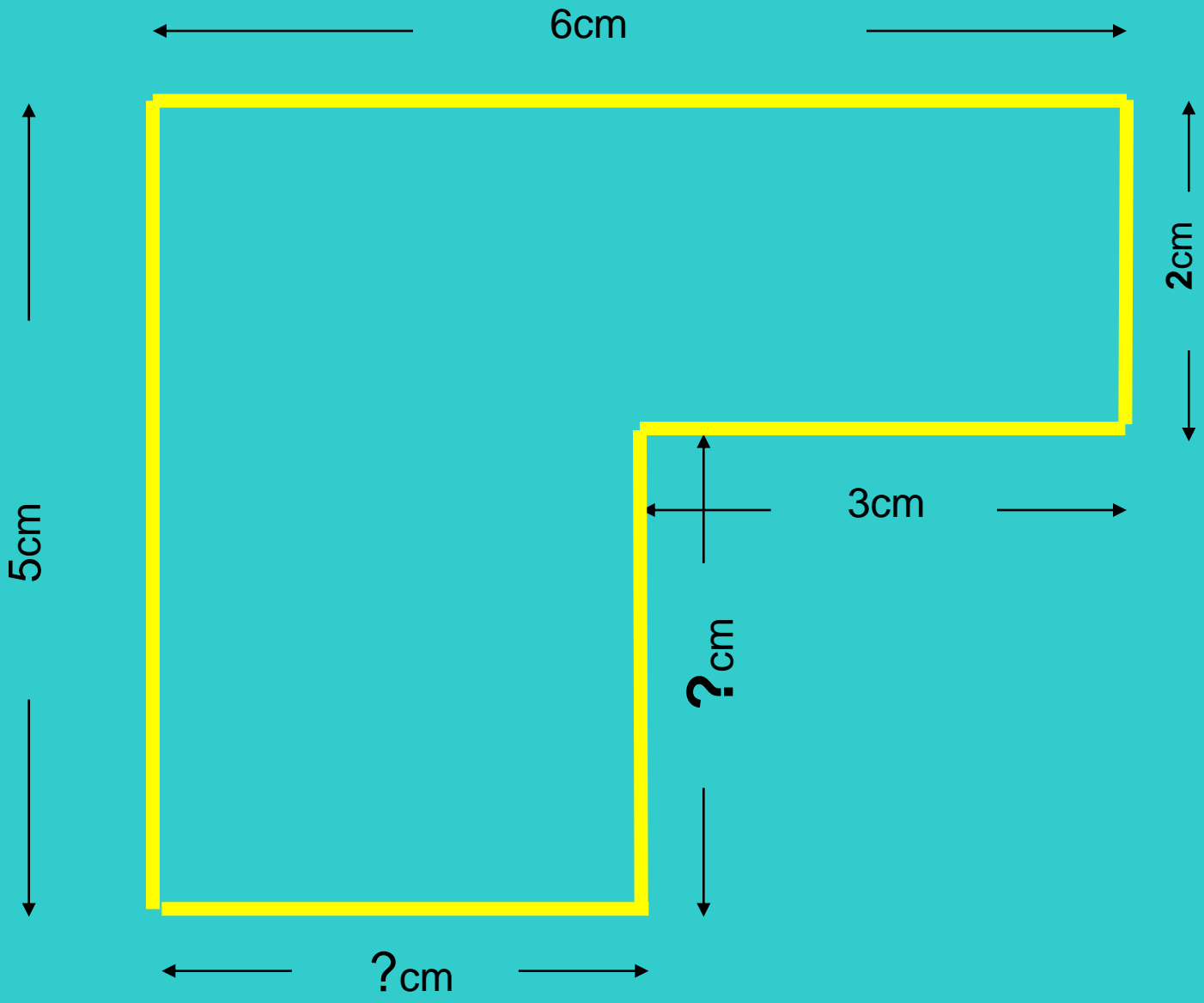
$$\text{Perimeter} = 20 \text{ cm}$$

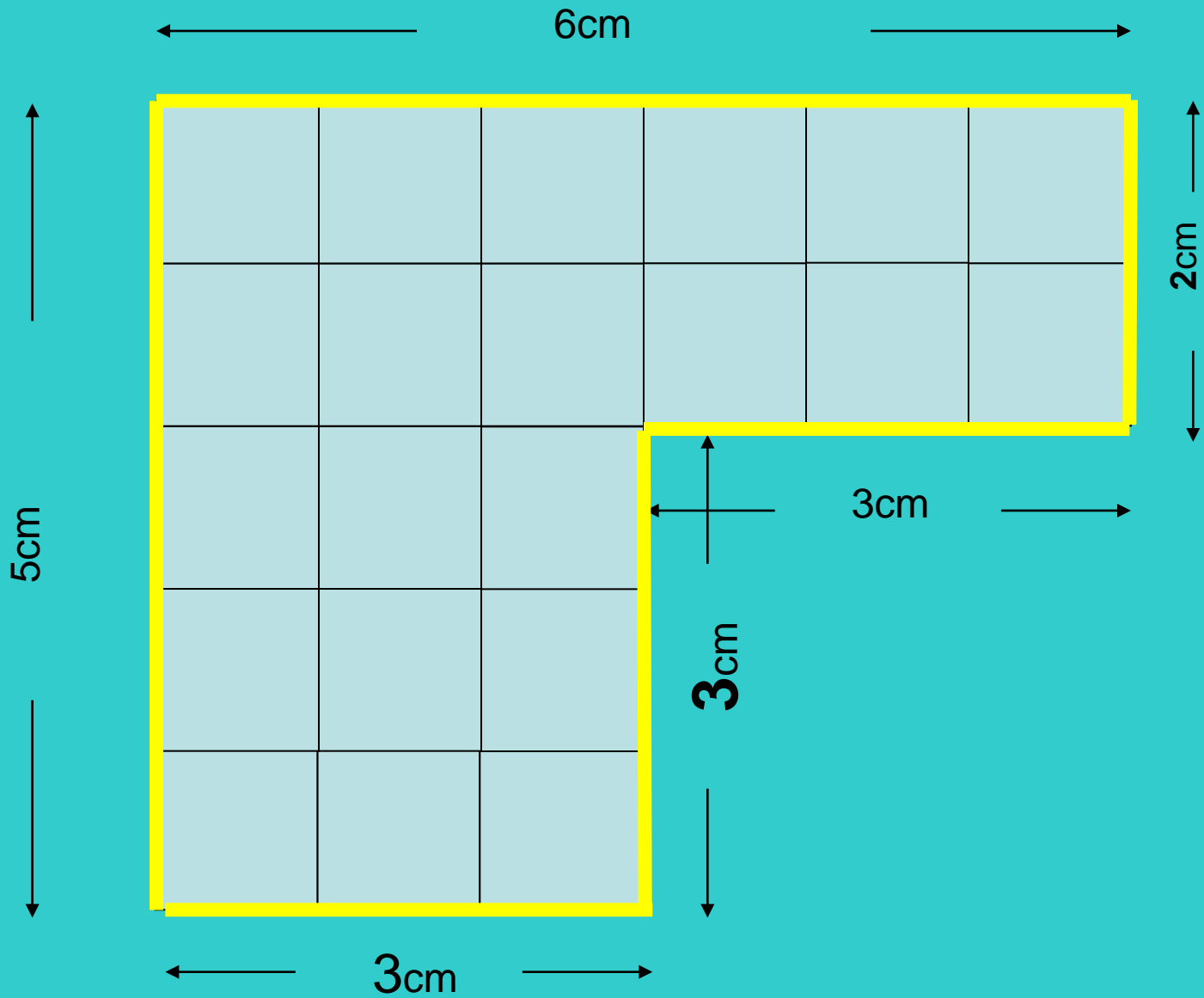




$$\text{Perimeter} = 5\text{cm} + 2\text{cm} + 2\text{cm} + 2\text{cm} + 3\text{cm} + 4\text{cm}$$

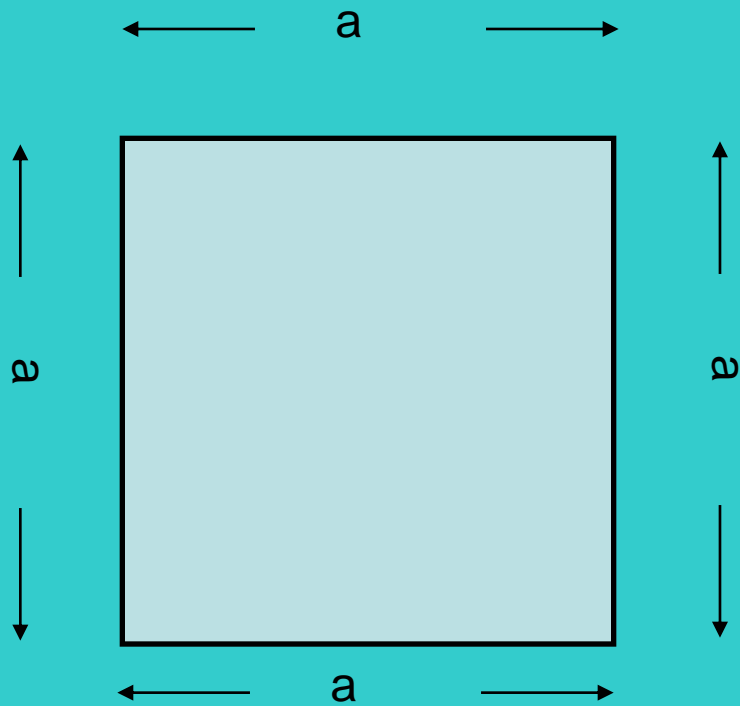
$$\text{Perimeter} = 18\text{cm}$$





$$\text{Perimeter} = 6\text{cm} + 2\text{cm} + 3\text{cm} + 3\text{cm} + 3\text{cm} + 5\text{cm}$$

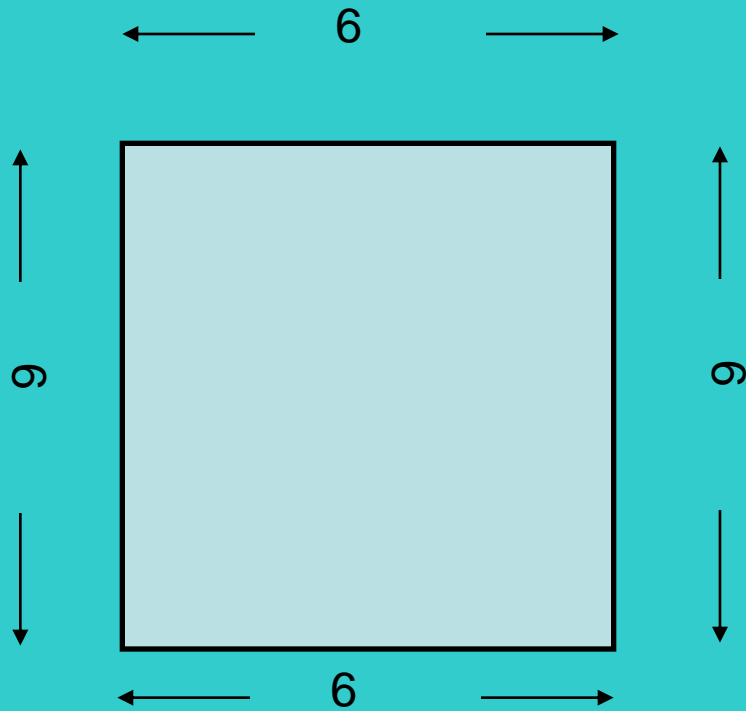
$$\text{Perimeter} = 22\text{cm}$$



$$\text{Perimeter} = a + a + a + a$$

$$\text{Perimeter} = 4 \times a$$

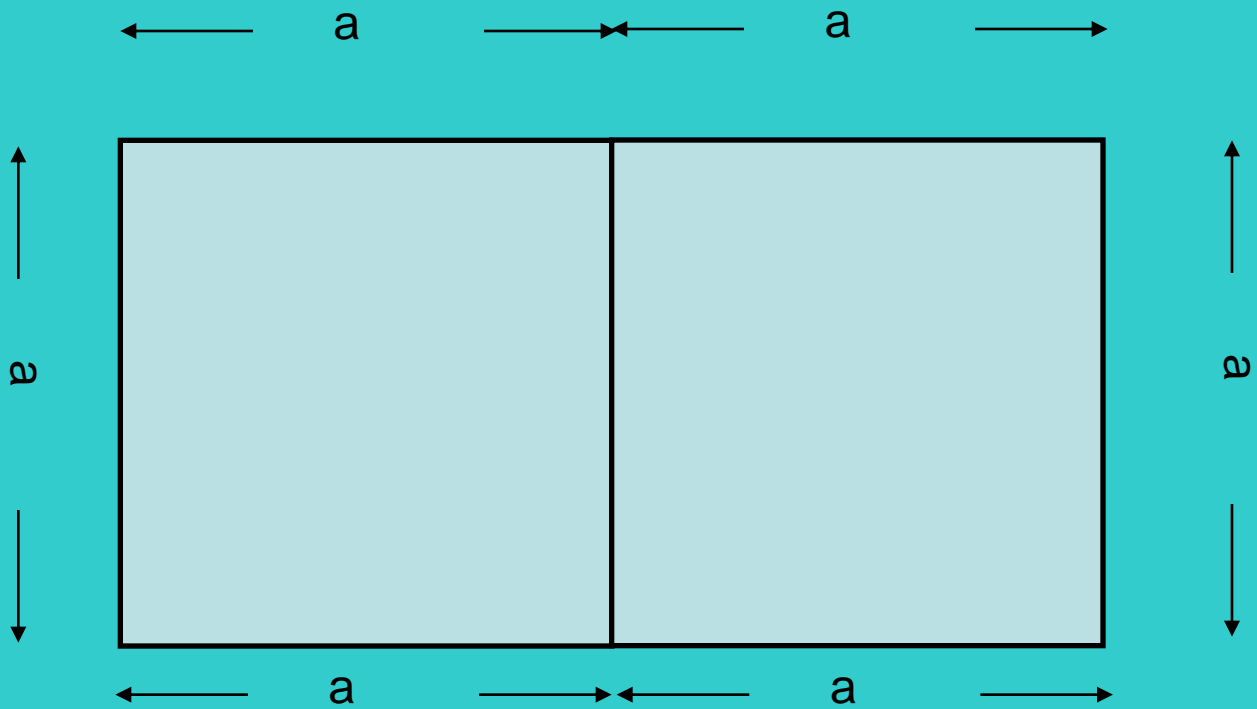
$$\text{Perimeter} = 4a$$

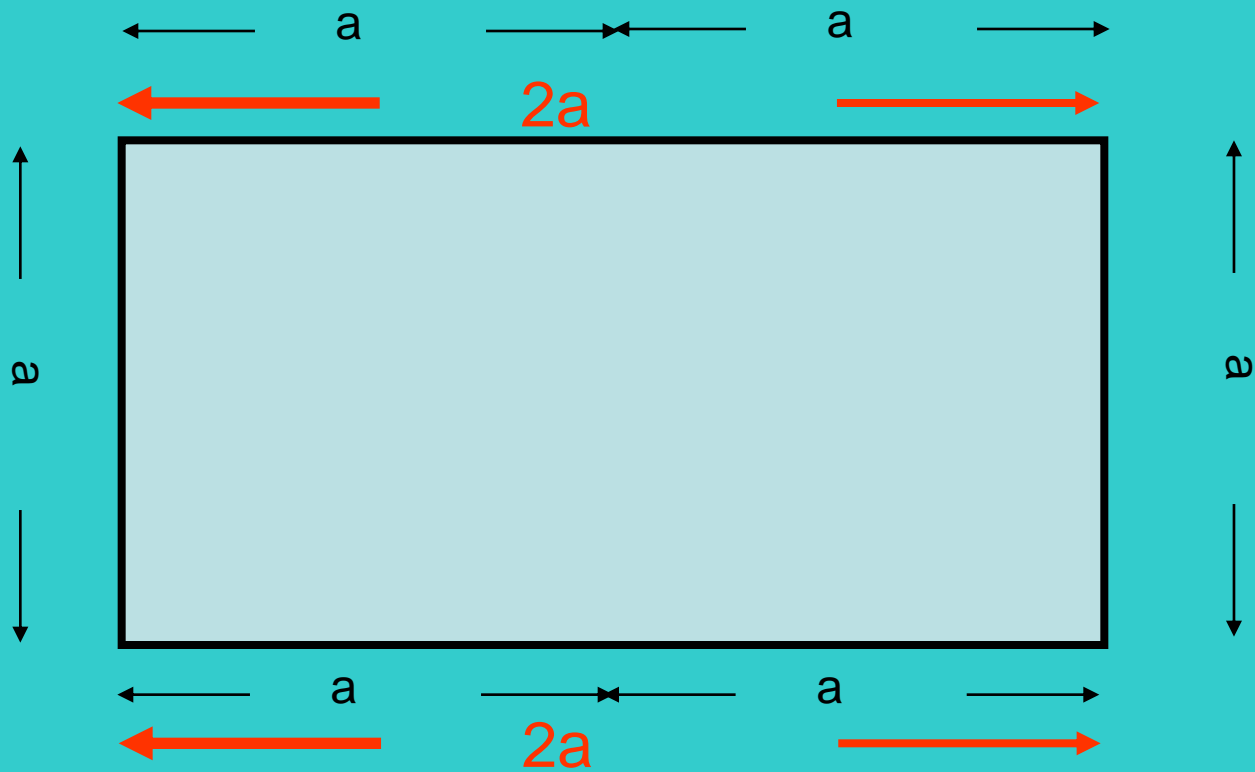


$$\text{Perimeter} = 6 + 6 + 6 + 6$$

$$\text{Perimeter} = 4 \times 6$$

$$\text{Perimeter} = 24$$

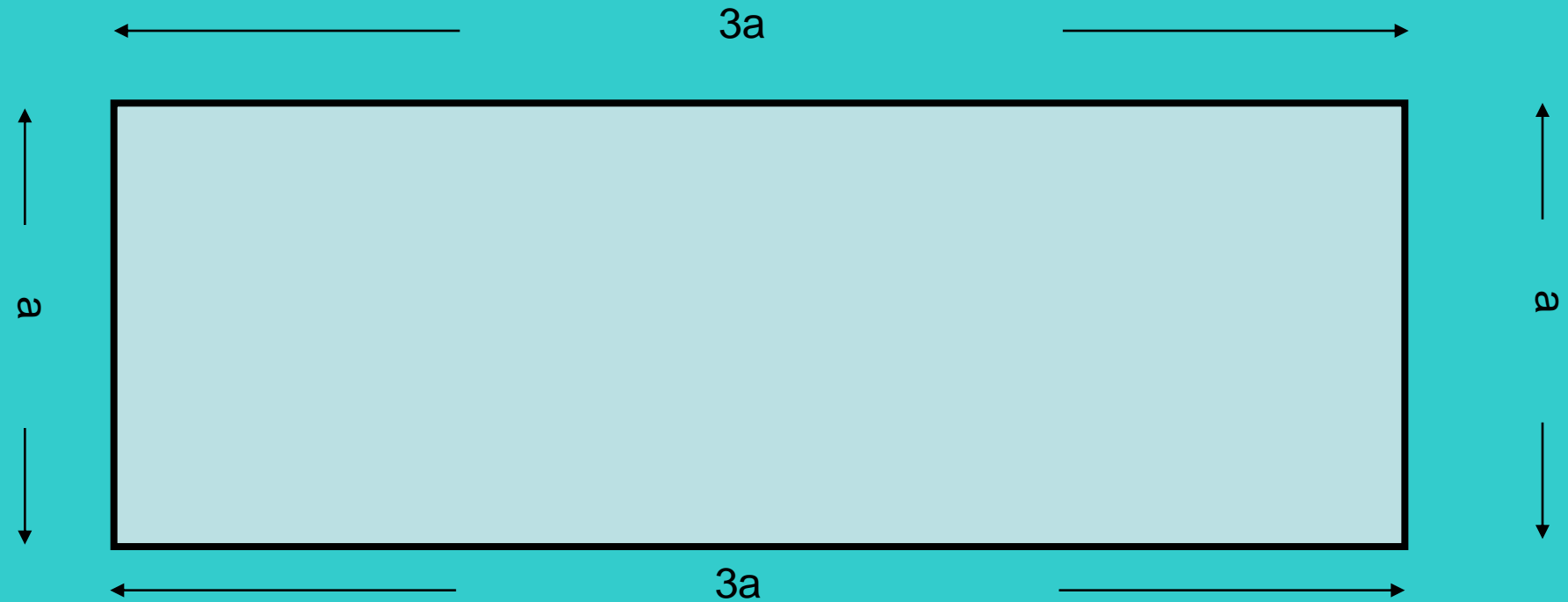




$$\text{Perimeter} = 2a + a + 2a + a$$

$$\text{Perimeter} = 6a$$

$$\text{Perimeter} = 6 \times a$$



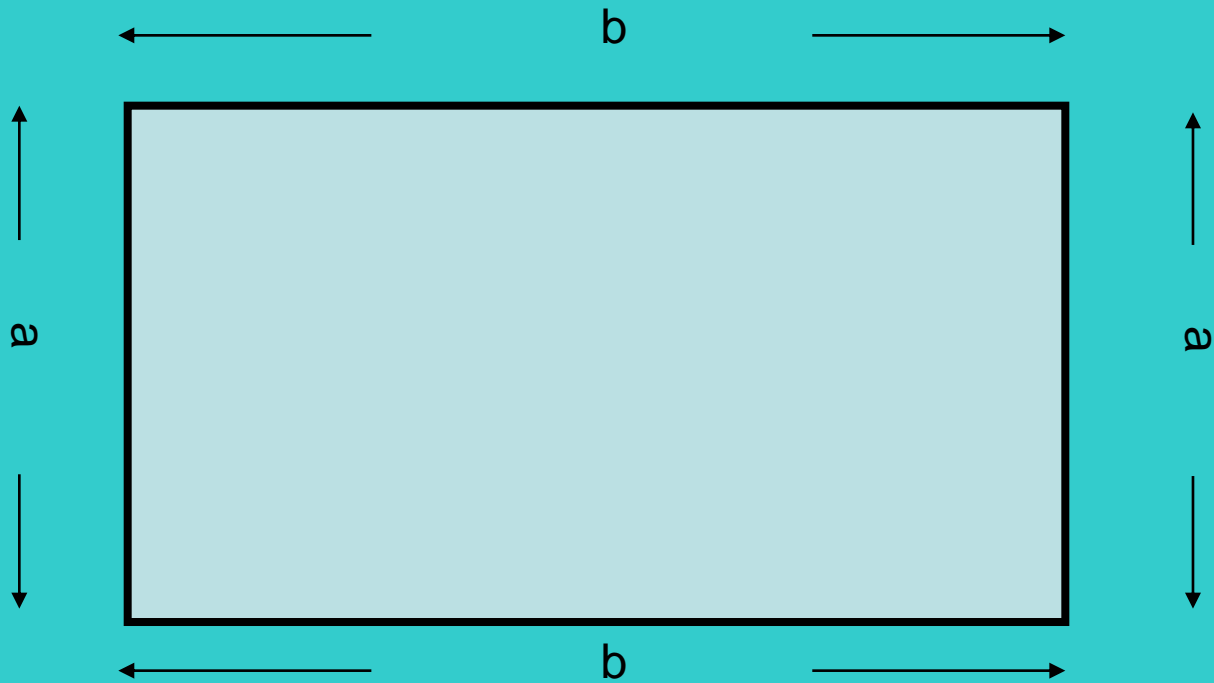
$$\text{Perimeter} = 3a + a + 3a + a$$

$$\text{Perimeter} = 8a$$

$$\text{Perimeter} = 8 \times a$$

8a means 8 x a

If $a = 5\text{cm}$ the perimeter = $8 \times 5 = 40\text{cm}$



$$\text{Perimeter} = a + b + a + b$$

$$\text{If } a = 3 \text{ and } b = 4$$

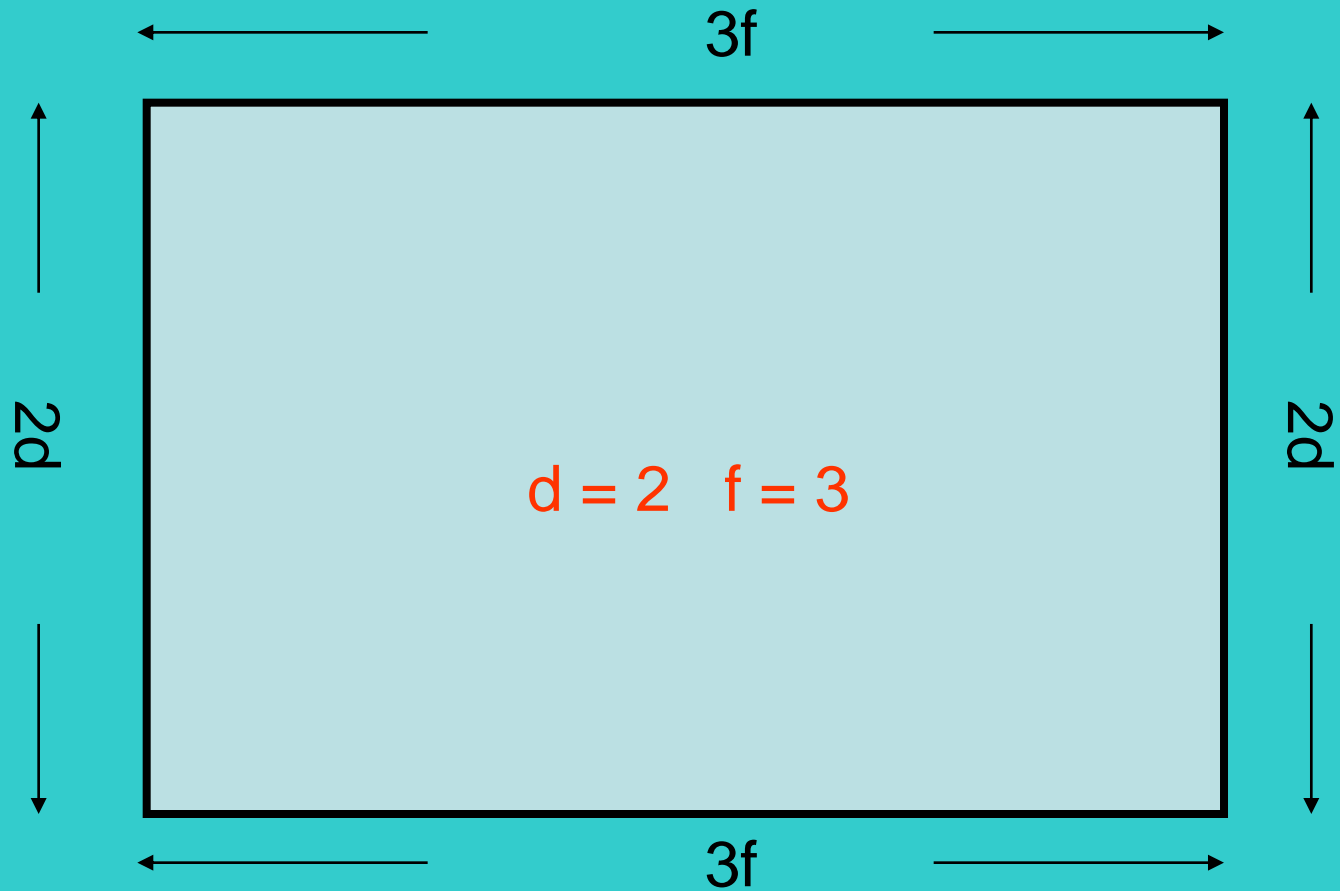
$$\text{Perimeter} = 2a + 2b$$

$$\text{Perimeter} = a + b + a + b$$

$$\text{Perimeter} = 3 + 4 + 3 + 4 = 14$$

$$\text{Perimeter} = 2a + 2b$$

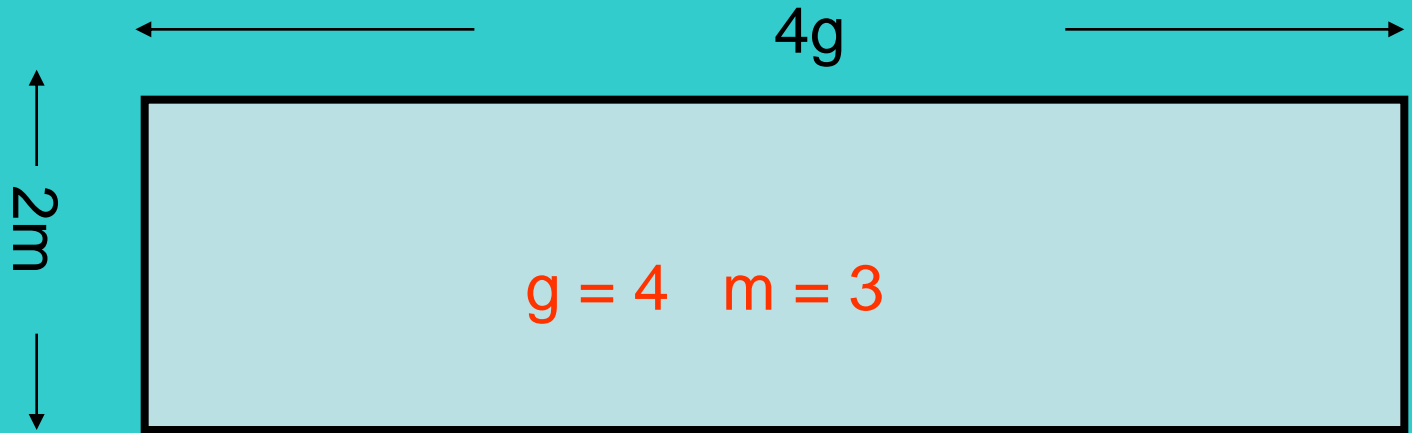
$$\text{Perimeter} = (2 \times 3) + (2 \times 4) = 6 + 8 = 14$$



$$\text{Perimeter} = 2d + 3f + 2d + 3f$$

$$\text{Perimeter} = 4d + 6f$$

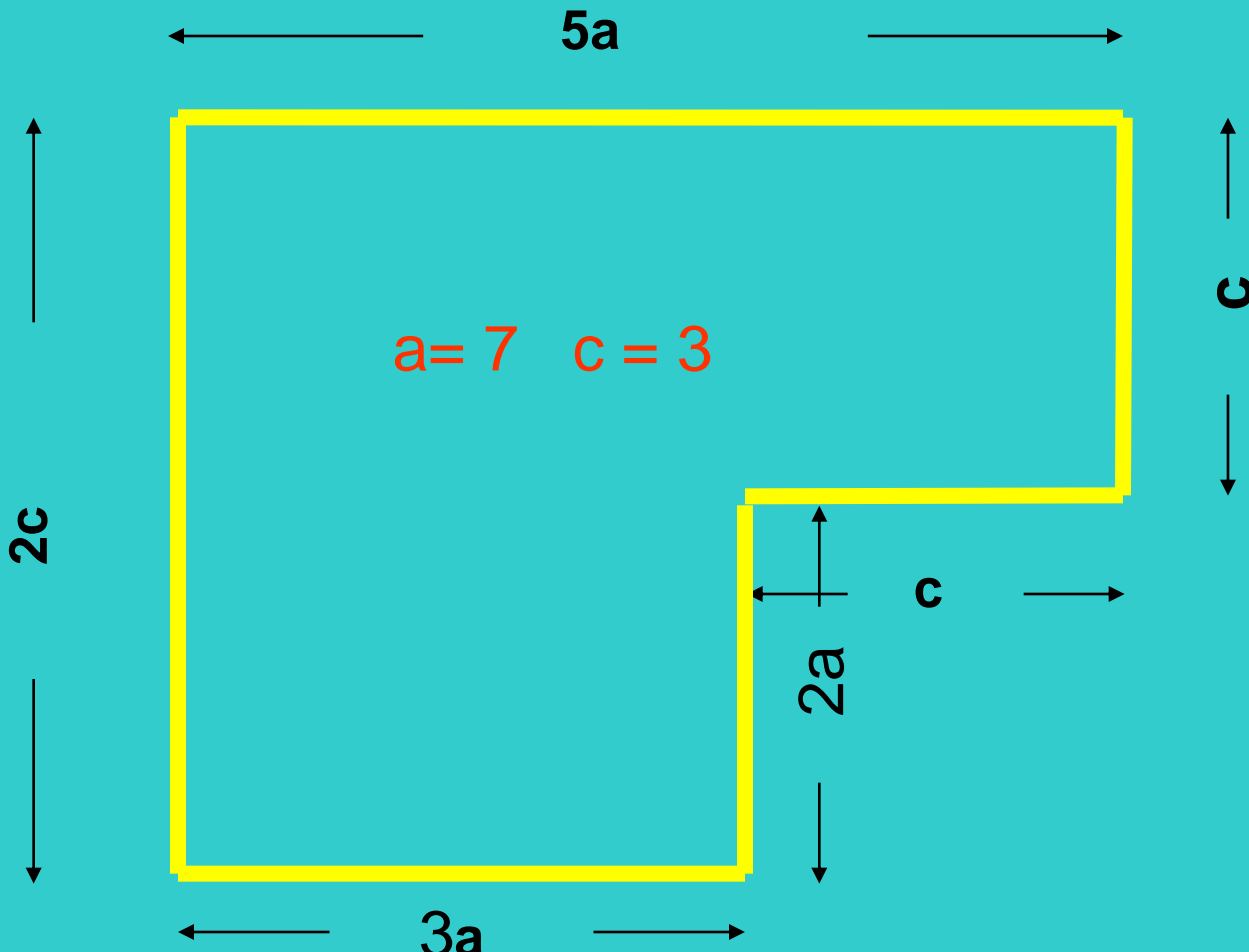
$$\text{Perimeter} = (4 \times 2) + (6 \times 3) = 8 + 18 = 26$$



$$\text{Perimeter} = 2m + 4g + 2m + 4g$$

$$\text{Perimeter} = 8g + 4m$$

$$\text{Perimeter} = (8 \times 4) + (4 \times 3) = 32 + 12 = 44$$

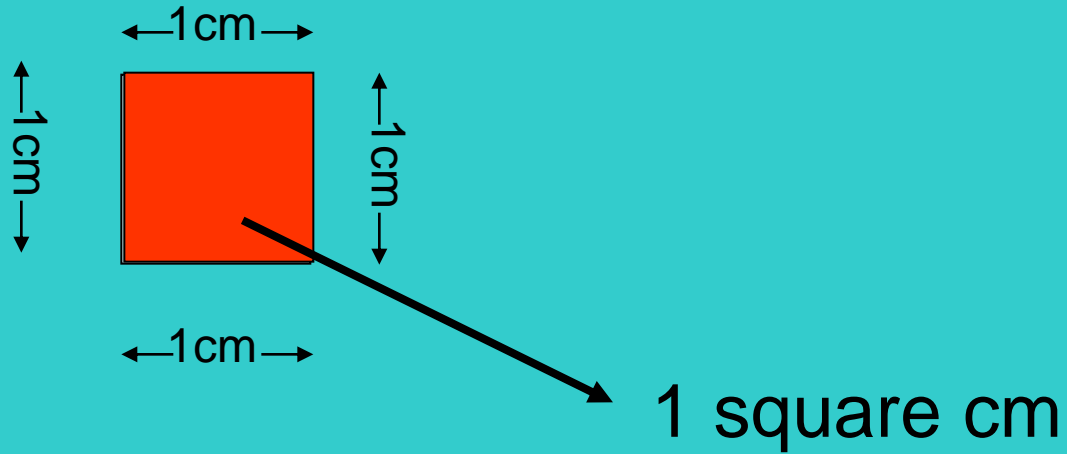


$$\text{Perimeter} = 5a + c + c + 2a + 3a + 2c$$

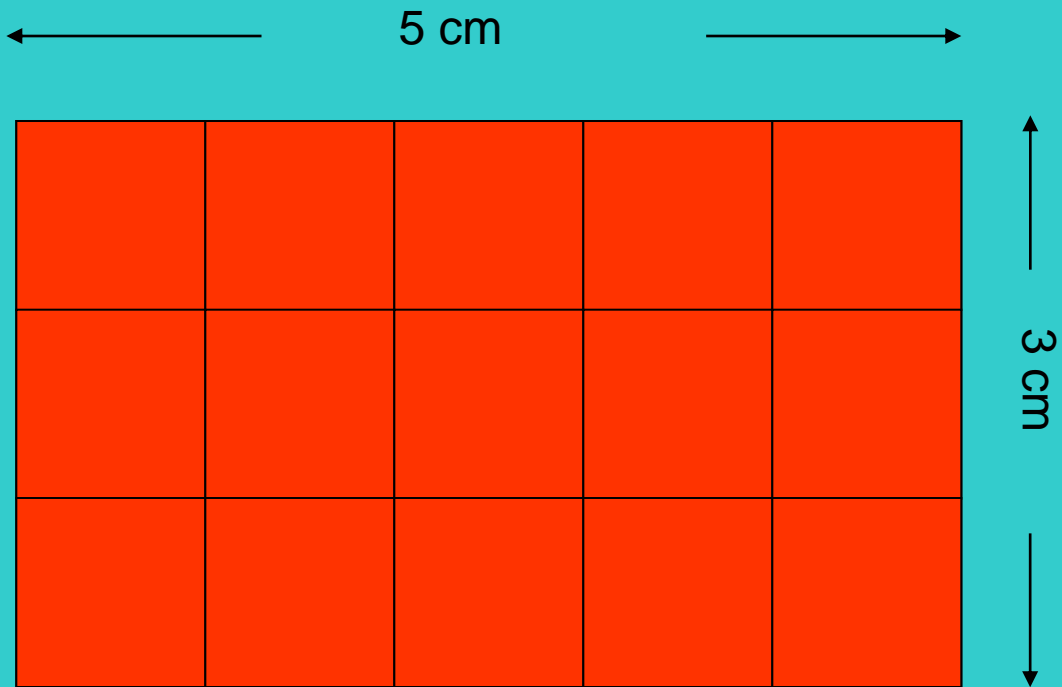
$$\text{Perimeter} = 10a + 4c$$

$$\text{Perimeter} = (10 \times 7) + (4 \times 3) = 70 + 12 = 82$$

Area

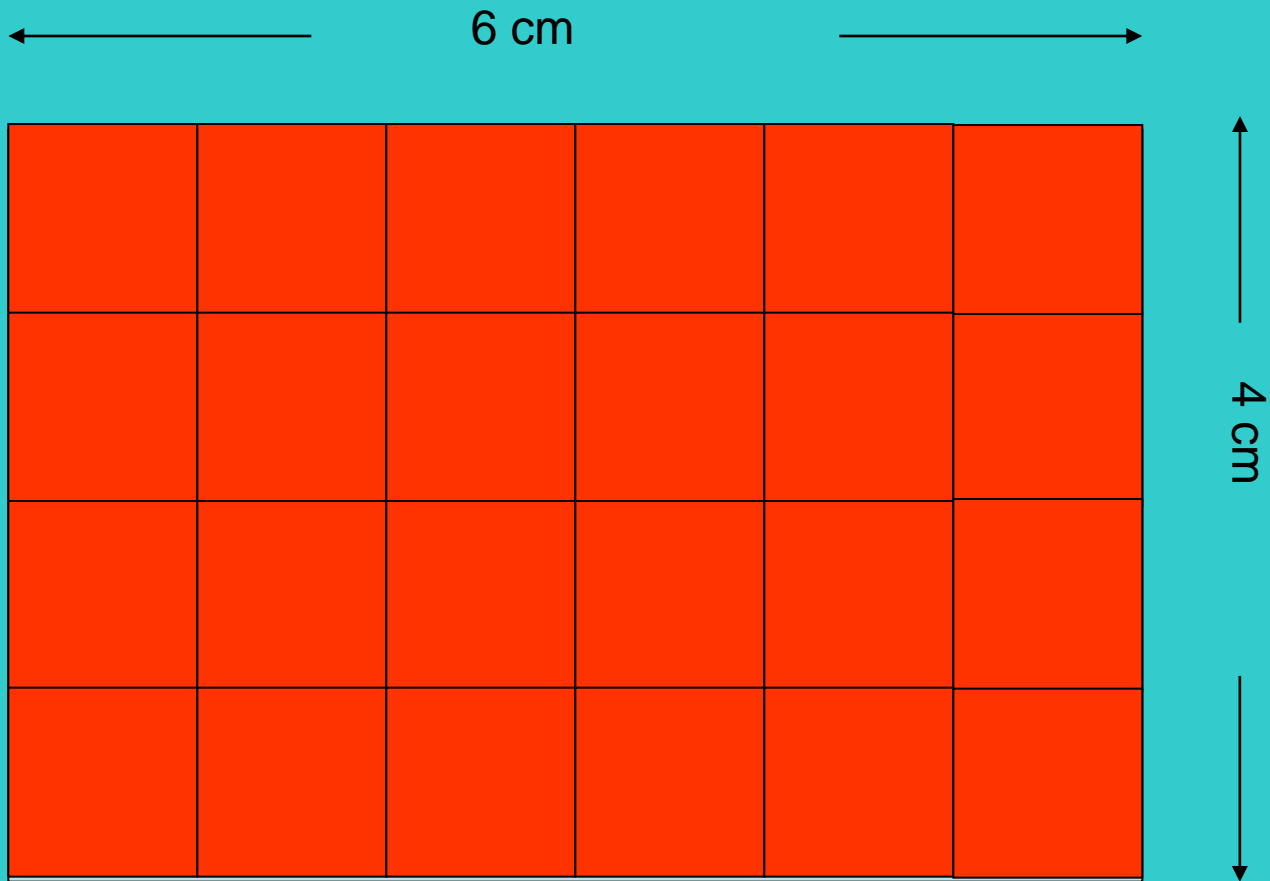


1cm^2



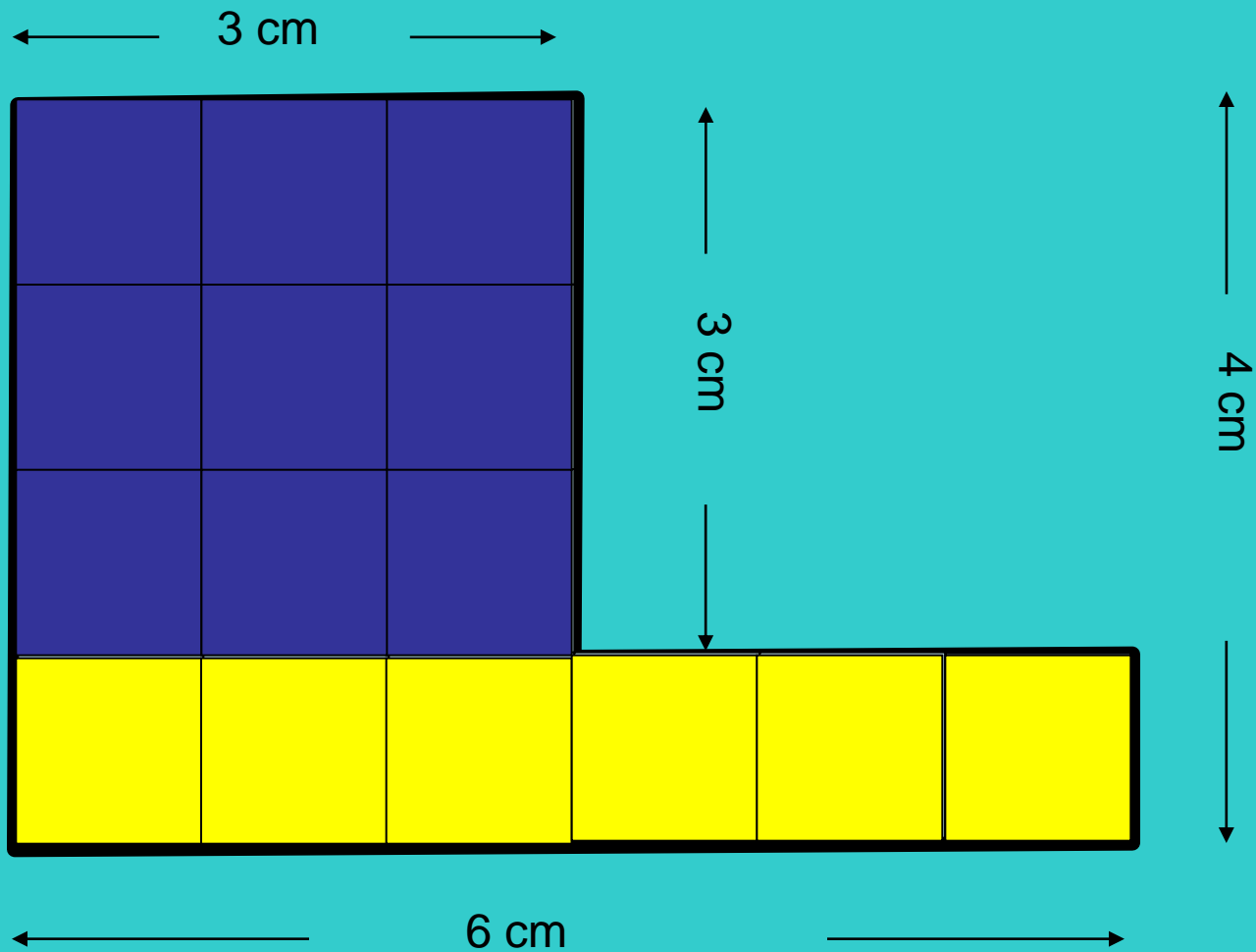
$$\text{Area} = 5\text{cm} \times 3\text{cm}$$

$$\text{Area} = 15 \text{ cm}^2$$



$$\text{Area} = 6\text{cm} \times 4\text{cm}$$

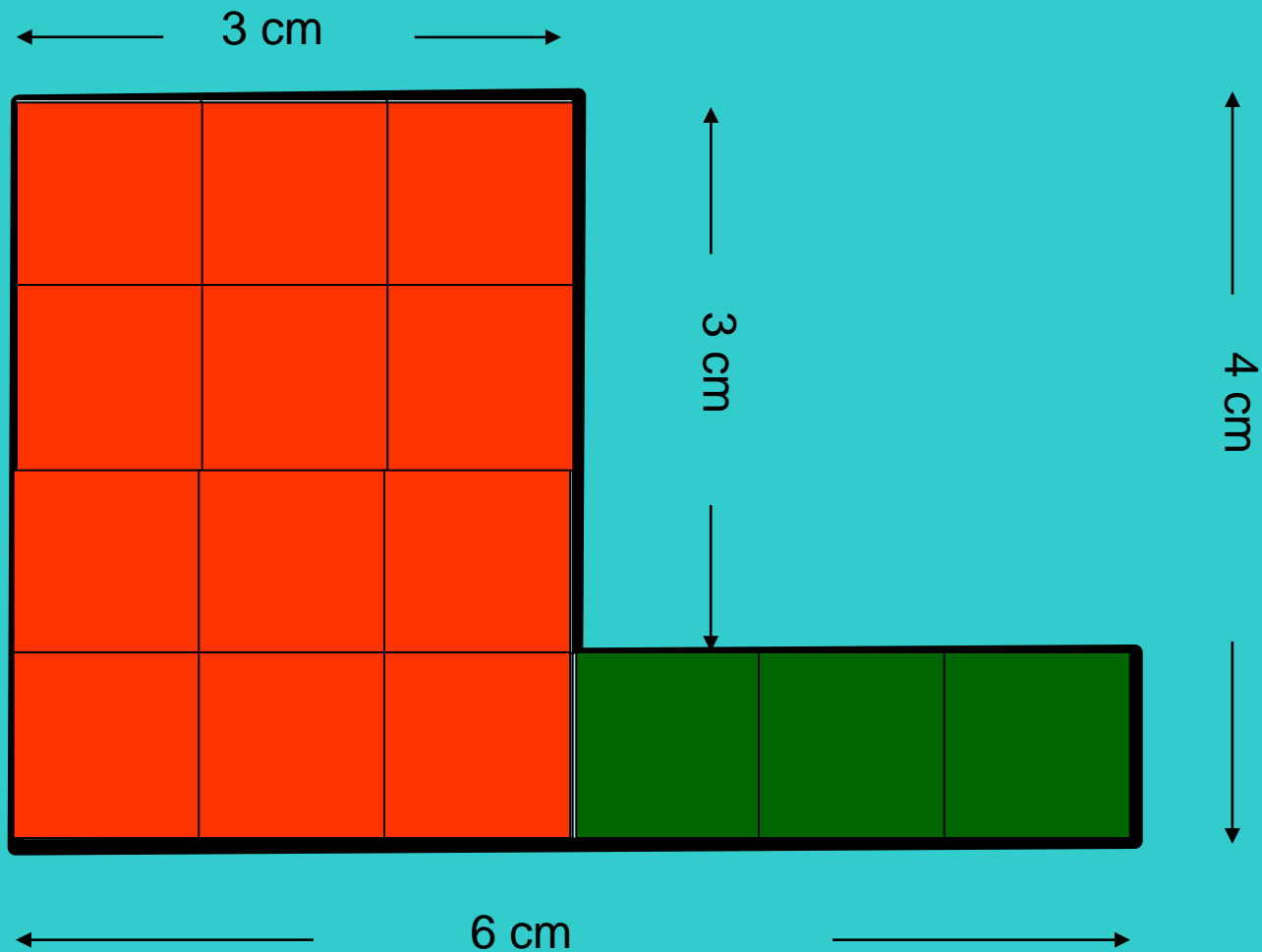
$$\text{Area} = 24 \text{ cm}^2$$



Blue area = $3\text{cm} \times 3\text{cm} = 9\text{cm}^2$

Yellow area = $6\text{cm} \times 1\text{cm} = 6\text{cm}^2$

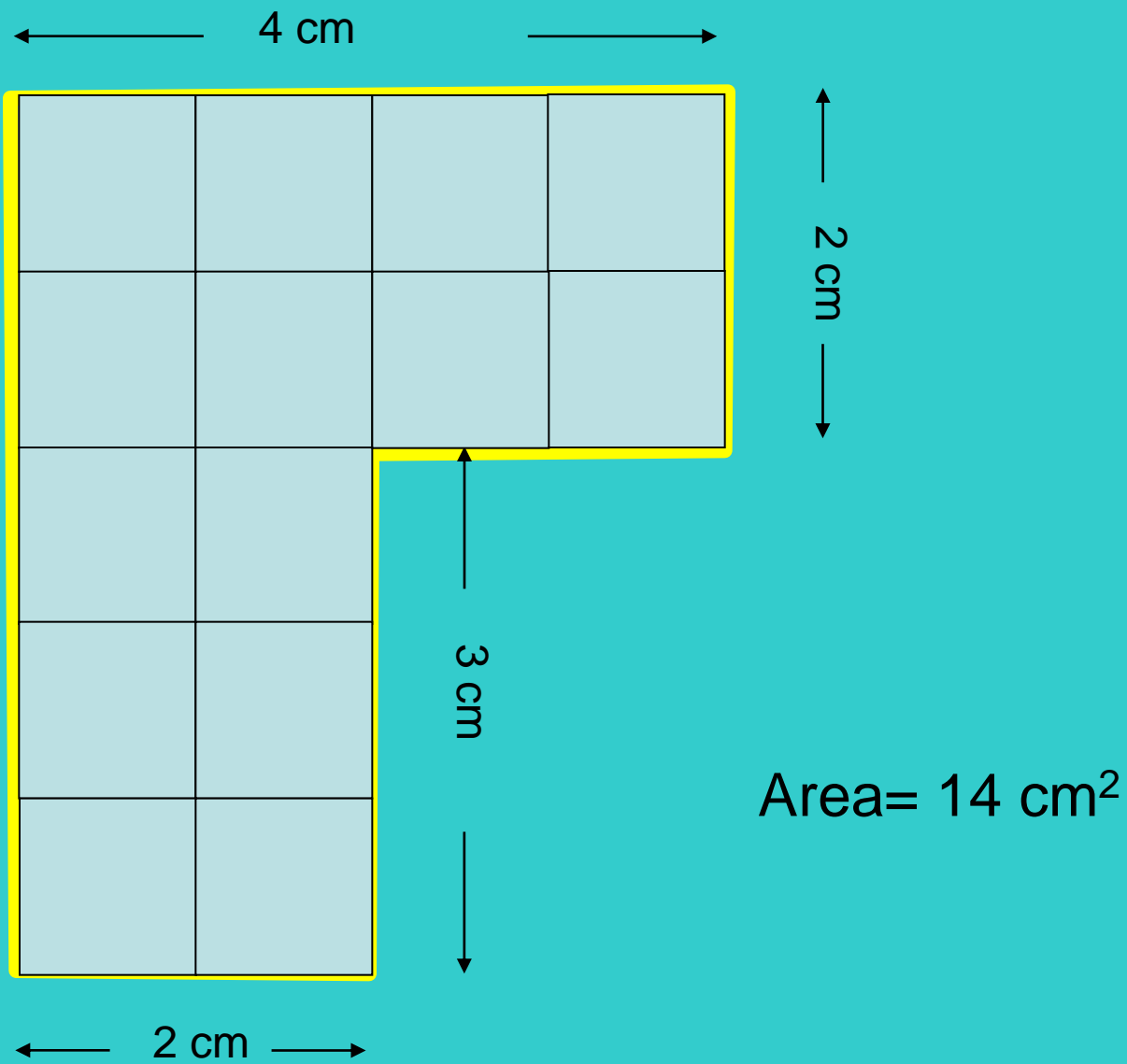
Total area 15cm^2

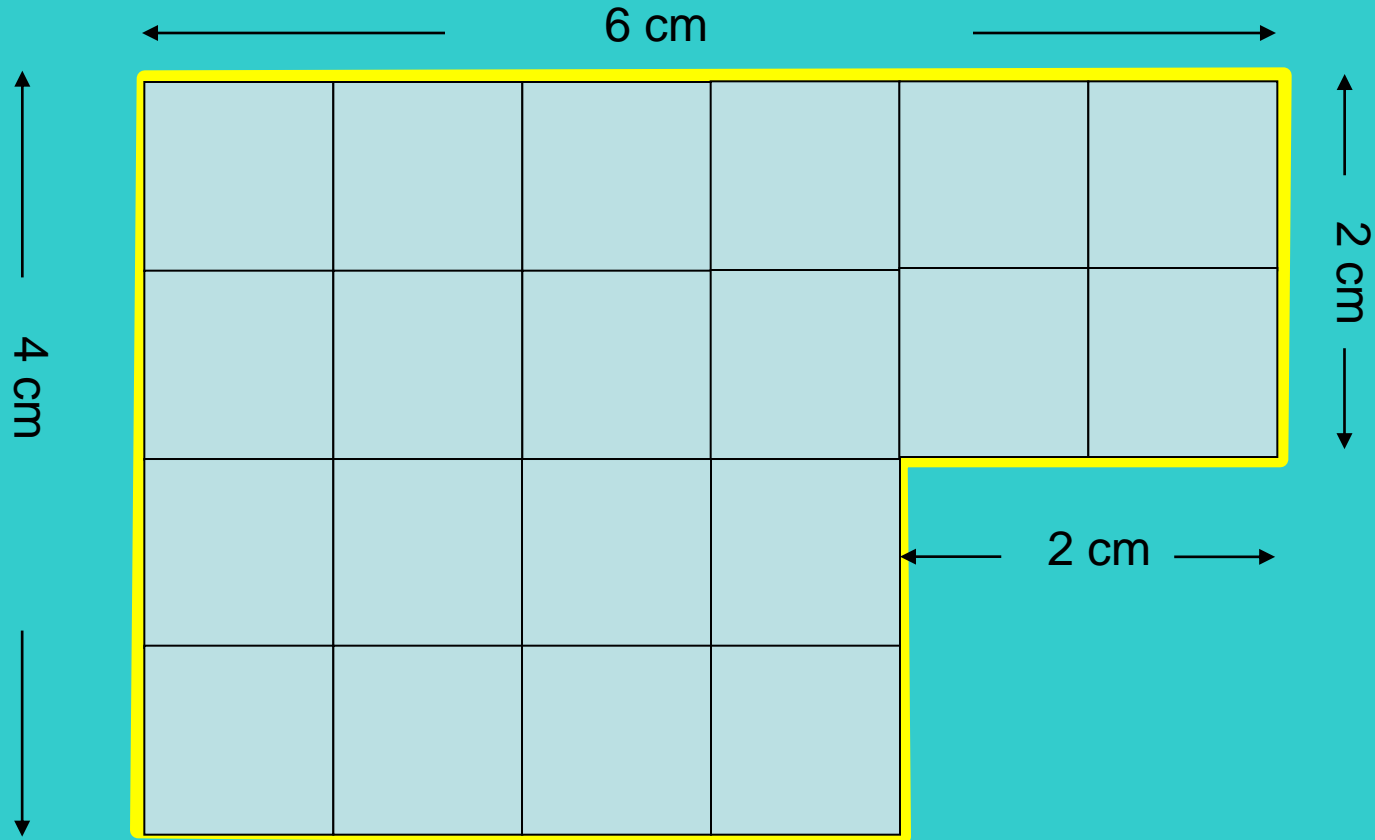


Red area = 3cm x 4cm = 12cm²

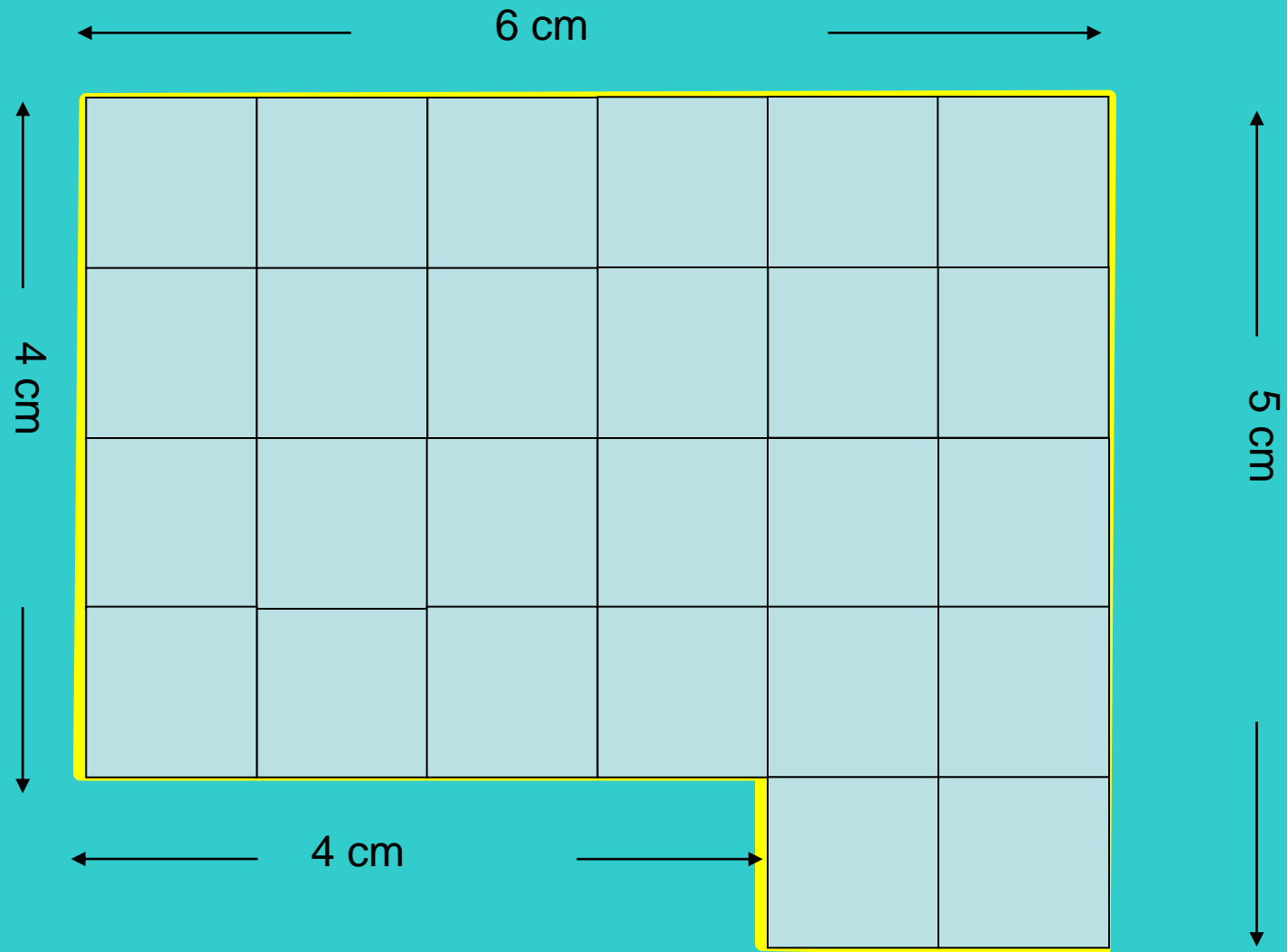
Green = 3cm x 1cm = 3cm²

Total area 15cm²

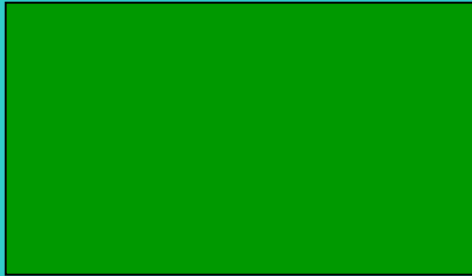




Area= 20 cm²



Area = 26 cm^2



The area of this rectangle is 12 cm^2 .

What are the possible dimensions – length and width of this rectangle?

Which of the rectangles you have found has the largest perimeter?

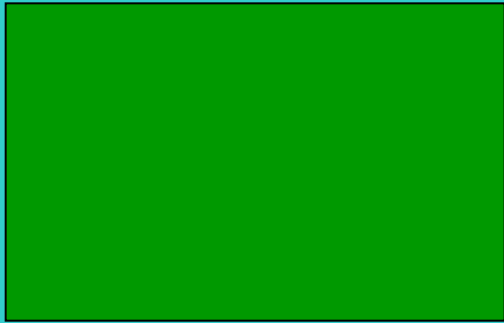
Possible answers **1 x 12 cm** **2 x 6 cm** **3 x 4 cm**

(any other answers would involve lengths with decimals).

Largest perimeter **1 x 12 cm rectangle with a perimeter of 26cm.**

Even greater perimeters are achieved if decimal lengths are acceptable!!!

(Example $0.1 \times 120\text{cm}$ perimeter is 240.2cm .)



This rectangle has a perimeter of 12 cm.

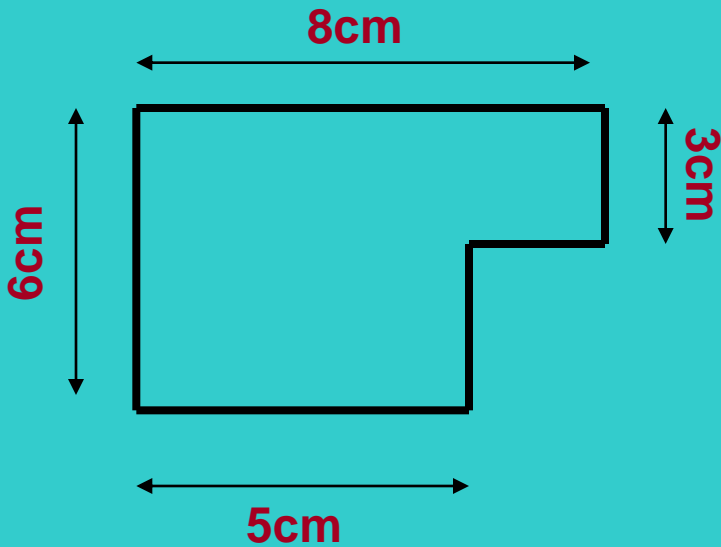
Find as many different rectangles with a perimeter of 12cm.

Which of the rectangles has the largest area?

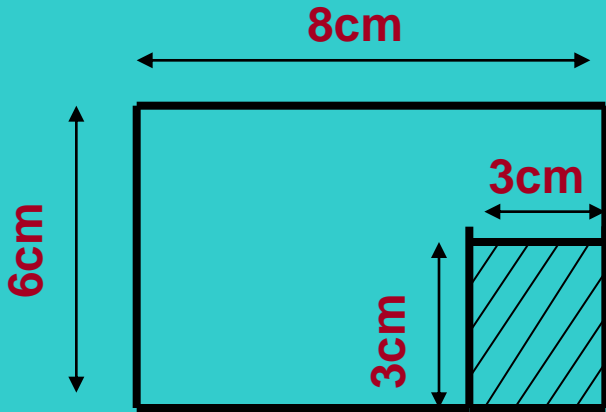
Possible answers: 4 x 2 cm, 3 x 3 cm, 1 x 5 cm

Any other answers would include decimal lengths.

Largest area: 3 x 3 cm = 9cm²

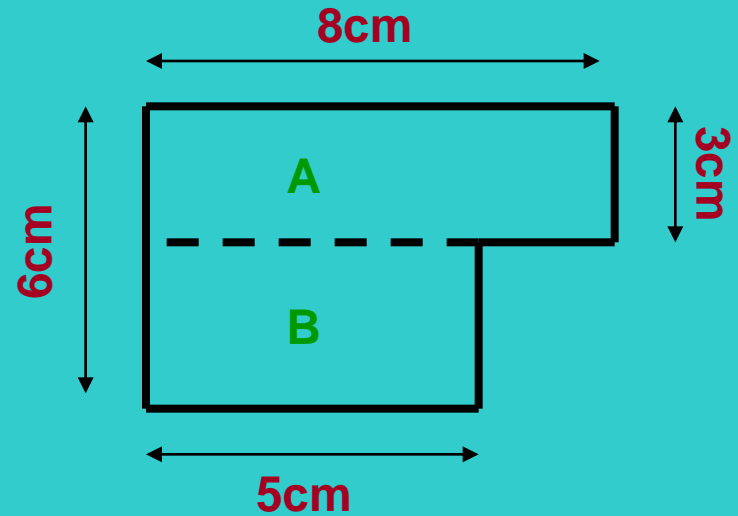


Work out the area and perimeter of the shape.



Area is: -

Perimeter: Why?

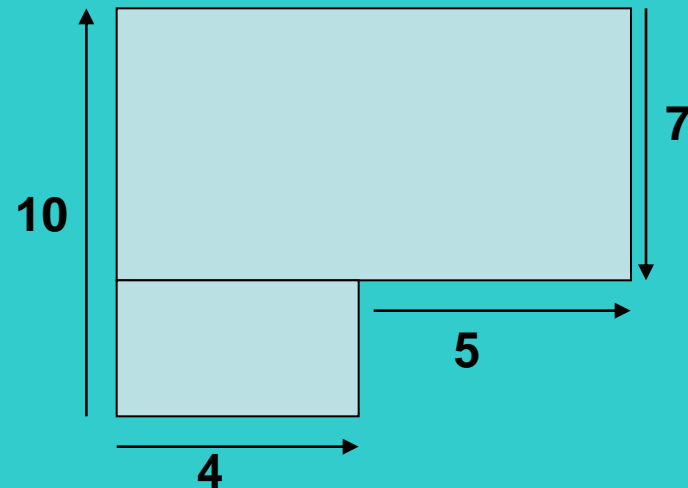
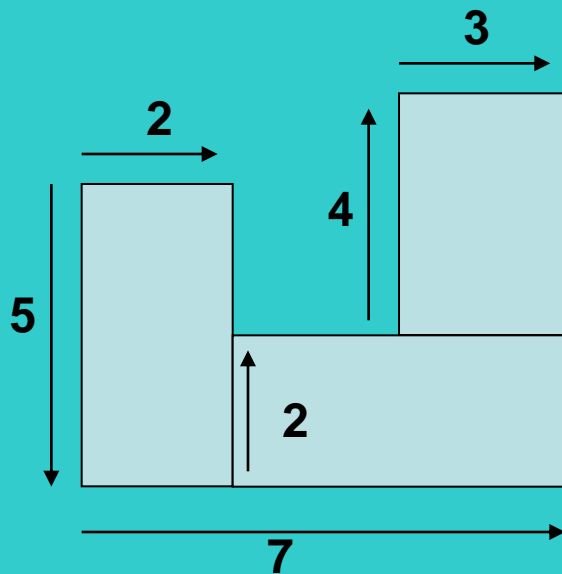
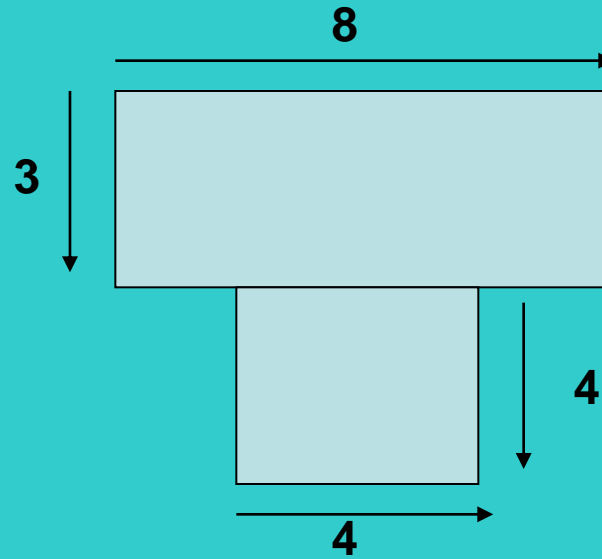
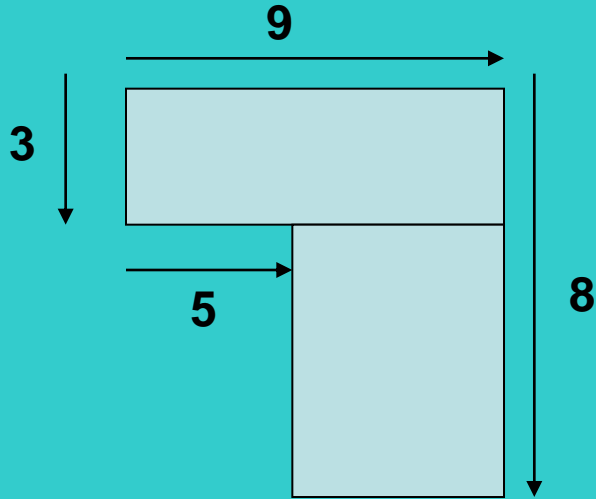


Area is: **A** + **B**

Perimeter: $6 + 8 + 3 + 3 + 3 + 5\text{cm}$

Find the area and perimeter of each of the shapes below:
(all measurements given in cms)

W/S 9.1B



Answers:

