MATHEMATICS · GRADES 4-6

Area of rectangles and squares

Difficulty level: Intermediate

Mathematics: Grades 4-6

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Overview of the concept

This is how you work out how much floor space a room has, how big a garden plot is, or how much wrapping paper you need for a box. Length times width gives you the area, and the area tells you how much material to buy. It is the most used area calculation there is, because so much of what we build and buy is rectangular.



Rule

Area of rectangles and squares: $A = l \times w$

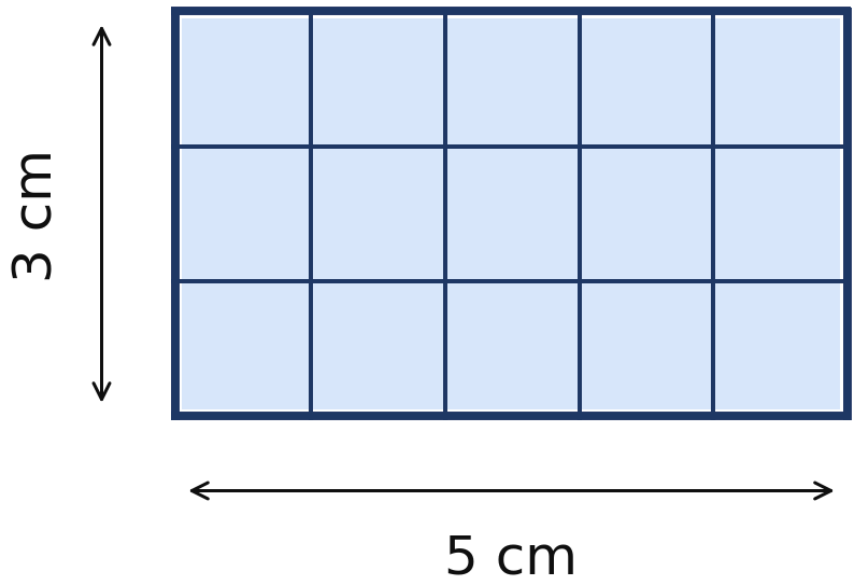
A square is a rectangle with all sides equal, so $A = s \times s = s^2$.

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Worked examples

EXAMPLE 1

Q What is the area of a rectangle 5 cm by 3 cm?



SOLUTION

Count the squares in one row: 5

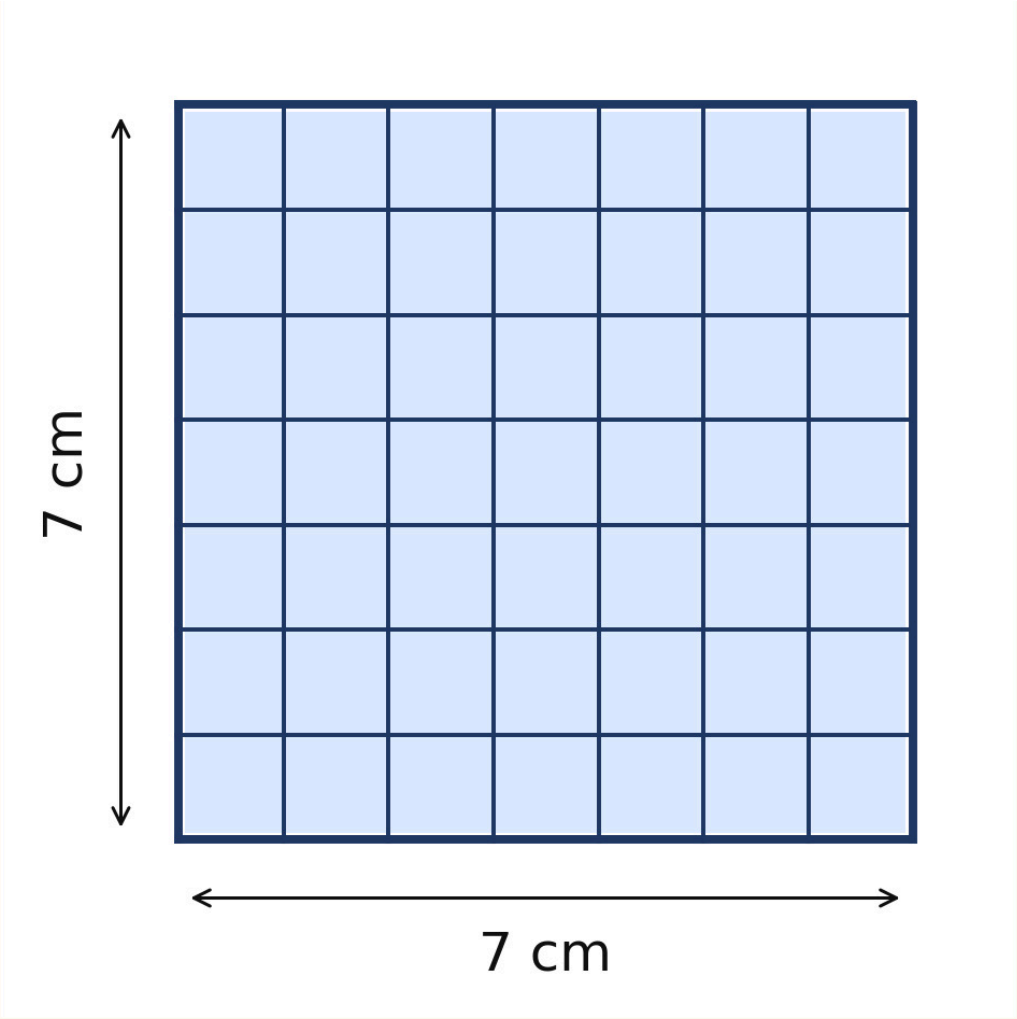
Count the rows: 3

Multiply rows by columns: $5 \times 3 = 15$ cm^2

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EXAMPLE 2

Q What is the area of a square with side 7 cm?



SOLUTION

A square has equal sides, so rows and columns match.

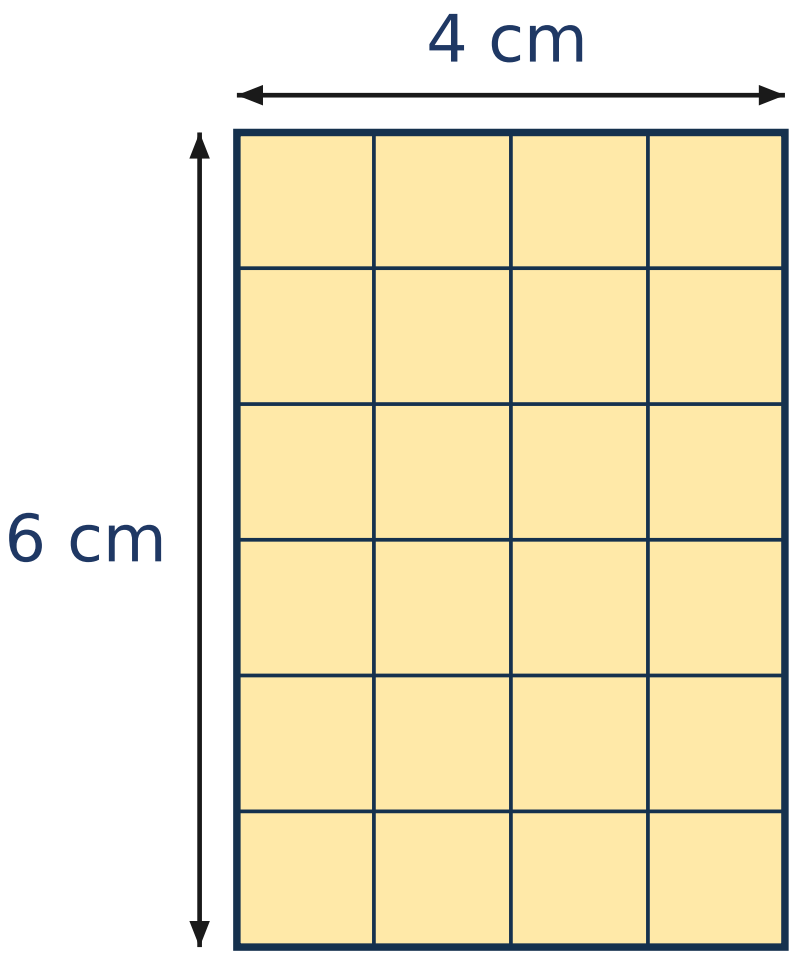
Multiply side by side: $7 \times 7 = 49$

The area is 49 cm^2

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Practice questions

1 What is the area of the shape in the picture?



A 10 cm^2

B 20 cm^2

C 28 cm^2

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D 24 cm²

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2 **What is the area of a square with side 5 cm?**

A 25 cm²

B 10 cm²

C 20 cm²

D 30 cm²

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3 A square has area 49 cm². What is its side length?

- **A** 7 cm
- **B** 14 cm
- **C** 24.5 cm
- **D** 49 cm

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4 A rectangle has area 100 cm² and length 20 cm. What is its width?

- **A** 5 cm
- **B** 20 cm
- **C** 80 cm
- **D** 120 cm

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5 What is the area of a rectangle 12 cm by 4 cm?

- **A** 16 cm²
- **B** 44 cm²
- **C** 52 cm²
- **D** 48 cm²

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6 Which has the larger area: a square with side 9 cm or a rectangle 10 cm by 8 cm?

- **A** The square
- **B** The rectangle
- **C** They are equal

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7 A square has perimeter 32 cm. What is its area?

- **A** 64 cm²
- **B** 32 cm²
- **C** 16 cm²
- **D** 128 cm²

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8 A rectangle 15 cm by 2 cm is cut into two equal rectangles. What is the area of one piece?

- **A** 15 cm²
- **B** 30 cm²
- **C** 7.5 cm²
- **D** 60 cm²

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9 A square has area 121 cm². What is its perimeter?

- **A** 44 cm
- **B** 121 cm
- **C** 11 cm
- **D** 22 cm

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10 A rectangle is 6 cm by 9 cm. Its length is doubled. What is the new area?

- **A** 108 cm²
- **B** 54 cm²
- **C** 63 cm²
- **D** 216 cm²

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ANSWER KEY

1. 24 cm^2

2. 25 cm^2

3. 7 cm

4. 5 cm

5. 48 cm^2

6. The square

7. 64 cm^2

8. 15 cm^2

9. 44 cm

10. 108 cm^2

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