Your notes

GCSE Maths: revision notes

Area and perimeter

Contents

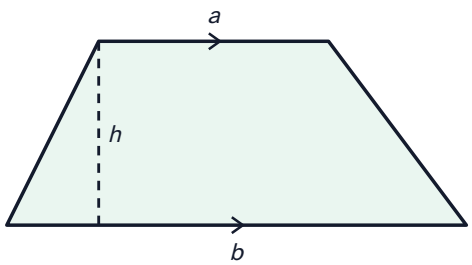
1. Perimeter
2. Area formulae
3. Compound shapes
4. Units
5. Worked examples
6. Key terms
7. Quick questions
8. What to do next

Perimeter

- **Perimeter** is the total distance around the outside of a shape. Add up all the side lengths.
- In a **compound shape**, work out any missing side lengths first.

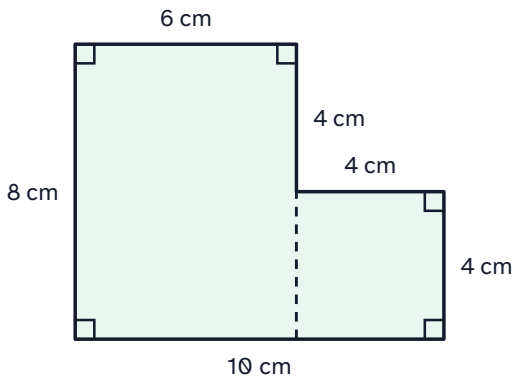
Area formulae

- Rectangle: length × width. Triangle: ½ × base × **perpendicular height**.
- **Parallelogram**: base × **perpendicular height**. Trapezium: ½(a + b)h, where a and b are the parallel sides.
- Always use the **perpendicular height** (at right angles to the base), not a slanted side.



Compound shapes

- Split the shape into rectangles and triangles, find each **area**, then add them. Subtract any parts that are cut out.
- An L-shape made from a 10 cm by 8 cm rectangle with a 4 cm by 3 cm corner cut out has an **area** of 80 − 12 = 68 cm².

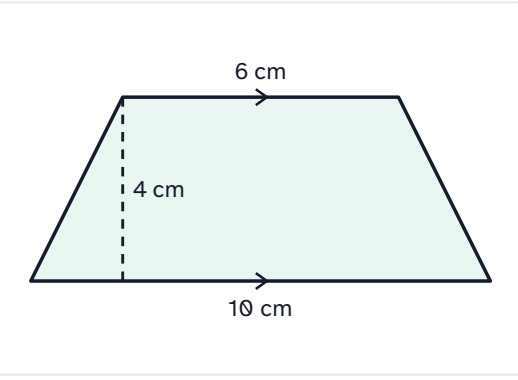


Units

- **Area** is measured in **square units**, such as mm^2, cm^2 and m^2. **Perimeter** is a length, measured in mm, cm or m.
- 1 cm^2 = 100 mm^2, and 1 m^2 = 10 000 cm^2.

Worked examples

Find the area of a trapezium with parallel sides of 6 cm and 10 cm and a height of 4 cm



Use the formula: half the sum of the parallel sides, times the height. **A = ½(a + b)h**

Put the numbers in. **½ × (6 + 10) × 4**

Work it out. **½ × 16 × 4 = 32**

Answer: 32 cm^2

Key terms

Perimeter	The total distance around the outside of a shape.
Area	The amount of space inside a flat shape.
Perpendicular height	The height measured at right angles to the base.
Parallelogram	A quadrilateral with two pairs of parallel sides.
Compound shape	A shape made from two or more simple shapes.
Square units	Units for area, such as cm^2 and m^2.

Your notes

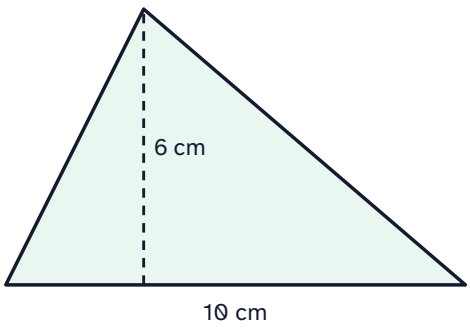
Quick questions

Cover the answers and test yourself: remembering is what makes it stick.

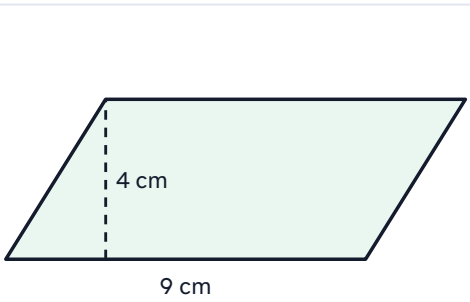
1. What is the perimeter of a rectangle 8 cm by 5 cm?



2. What is the area of a triangle with base 10 cm and perpendicular height 6 cm?

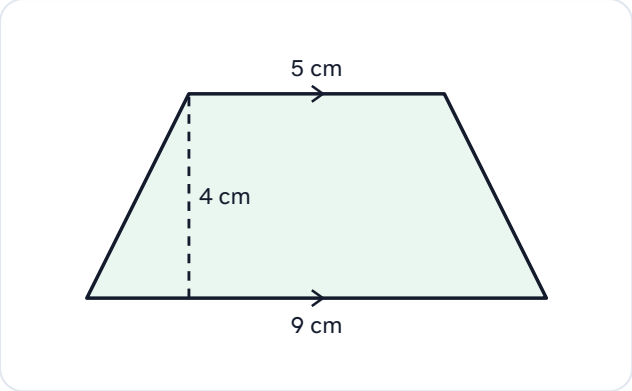


3. What is the area of a parallelogram with base 9 cm and perpendicular height 4 cm?

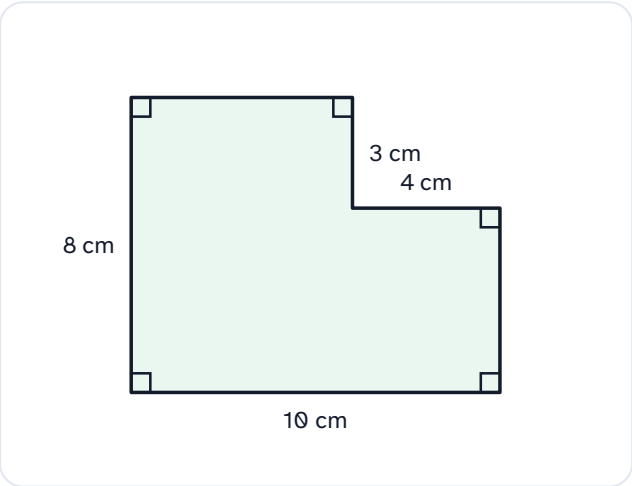


Your notes

4. A trapezium has parallel sides of 5 cm and 9 cm and a height of 4 cm. What is its area?



5. Which height do you use for the area of a triangle?
6. A square has an area of 49 cm^2. What is its perimeter?
7. An L-shape is a 10 cm by 8 cm rectangle with a 4 cm by 3 cm rectangle cut from one corner. What is its area?



8. Which unit could be used to measure area?

Answers

1. 26 cm
2. 30 cm^2
3. 36 cm^2
4. 28 cm^2
5. The perpendicular height
6. 28 cm
7. 68 cm^2
8. cm^2

What to do next

Practise 12 questions on this topic

Try 6 exam questions, with mark schemes

Read the lesson, one step at a time

Free revision for GCSE and KS3 at lycolearn.co.uk. Some notes are for one exam board only, and say so in brackets.

Your notes