MATHEMATICS · GRADES 4-6

Area of parallelograms

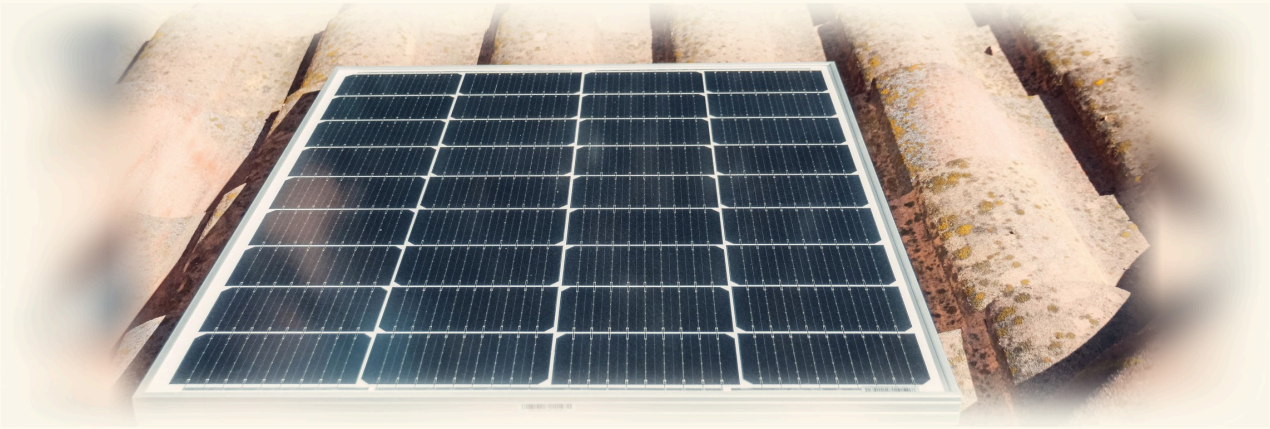
Difficulty level: Intermediate

Mathematics: Grades 4-6

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Overview of the concept

This is how you work out the surface of a slanted shape, like a tilted solar panel or a leaning sign. A parallelogram looks harder than a rectangle, but its area comes from the same idea, base times straight-up height. Knowing that stops you from overbuying material for a surface that is slanted rather than square.



Rule

Area of a parallelogram: $A = b \times h$

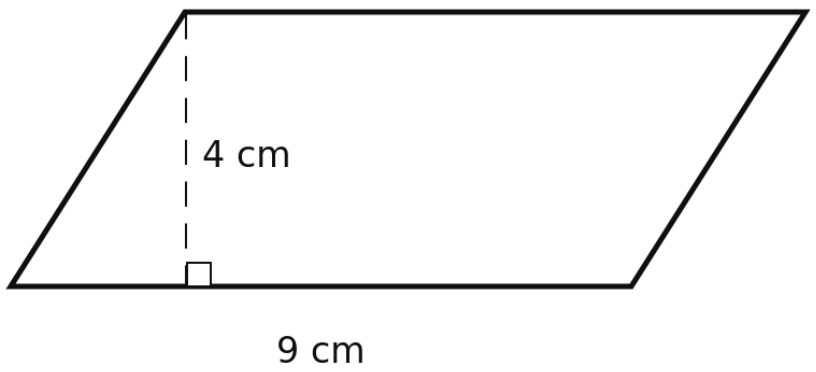
Use the vertical height, not the slant side: h is how tall the shape stands.

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Worked examples

EXAMPLE 1

Q What is the area of a parallelogram with base 9 cm and height 4 cm?



SOLUTION

Find the base: 9 cm. Find the vertical height, not the slant side: 4 cm

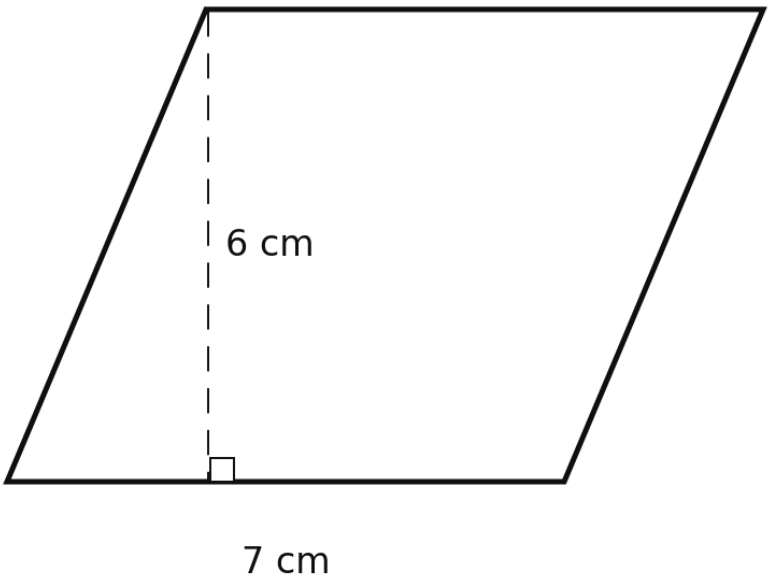
Multiply base by height: $9 \times 4 = 36$

The area is 36 cm^2

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EXAMPLE 2

Q What is the area of a parallelogram with base 7 cm and height 6 cm?



SOLUTION

Find the base: 7 cm. Find the vertical height: 6 cm

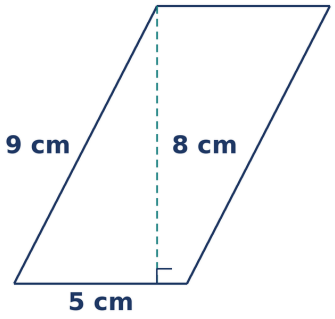
Multiply base by height: $7 \times 6 = 42$

The area is $42\ cm^2$

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Practice questions

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



A 35 cm^2

B 40 cm^2

C 45 cm^2

D 72 cm^2

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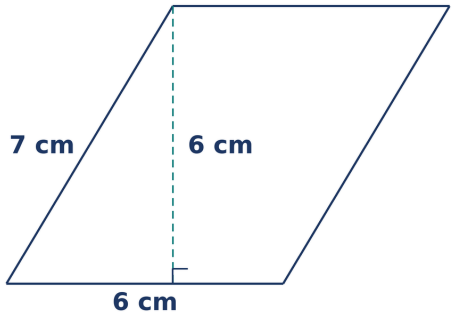
2 A parallelogram has area 30 cm² and base 10 cm. What is its vertical height?

- **A** 3 cm
- **B** 4 cm
- **C** 10 cm
- **D** 30 cm

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3 What is the perimeter of the parallelogram in the picture?



A 26 cm

B 13 cm

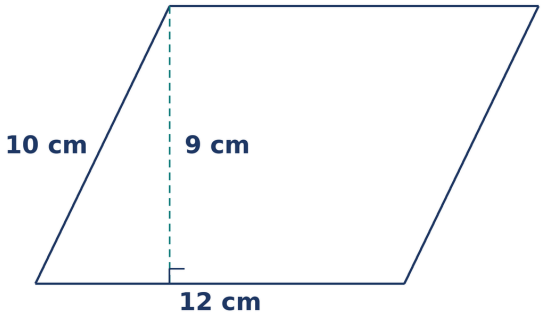
C 36 cm

D 42 cm

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4 The parallelogram in the picture has base 12 cm and height 9 cm. If its height is doubled, what is the new area?



A 216 cm²

B 108 cm²

C 117 cm²

D 54 cm²

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5

Which parallelogram has the larger area: one with base 4 cm and height 11 cm, or one with base 11 cm and height 4 cm?

A The first

B The second

C They are equal

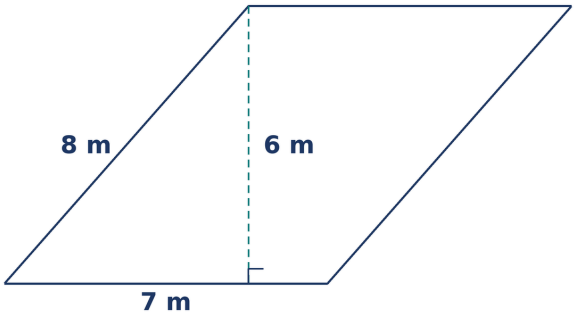
D Cannot tell

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6 How much turf covers two parallelograms like the one in the picture?



- **A** 84 m^2
- **B** 42 m^2
- **C** 48 m^2
- **D** 126 m^2

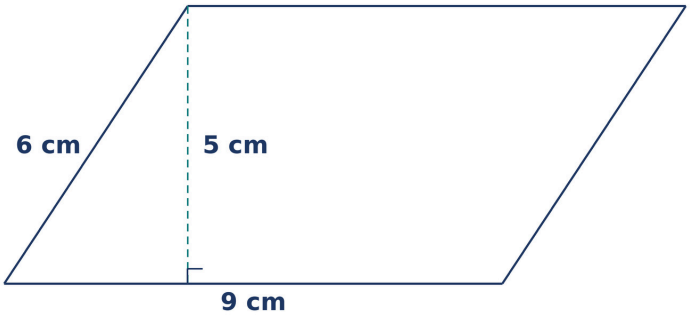
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7 A parallelogram has area 48 cm^2 and height 6 cm. What is its base?

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8 **Lee looks at the parallelogram in the picture and multiplies 9 by 6 to get 54 cm². What is the correct area?**



A 30 cm²

B 36 cm²

C 45 cm²

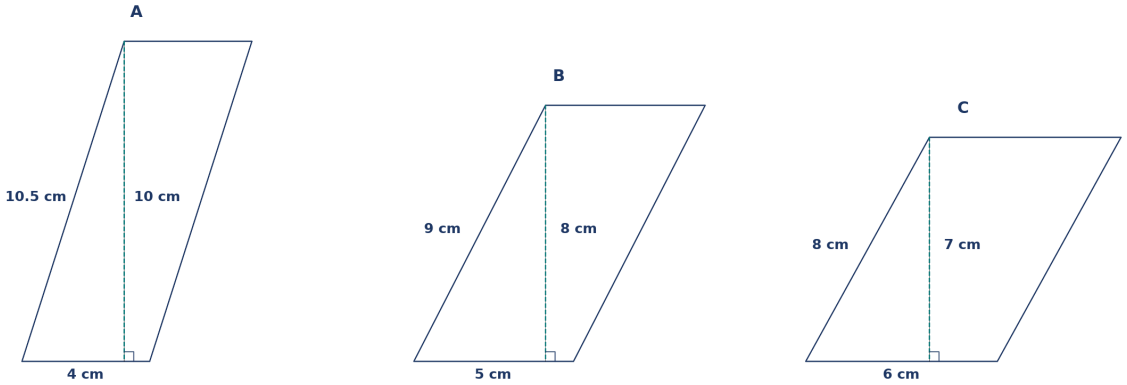
D 54 cm²

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9 **Which parallelogram in the picture has the largest area: A, B, or C?**

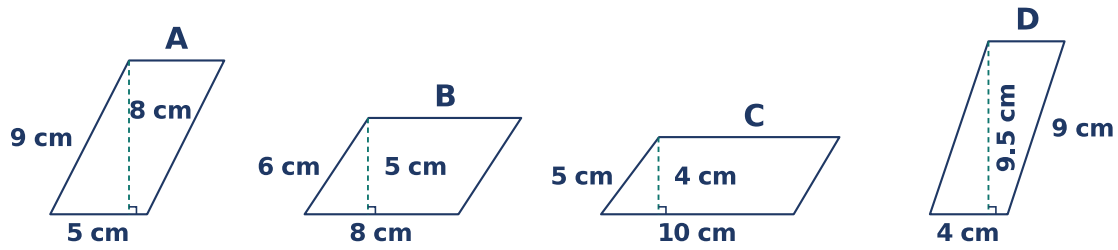


- **A** A
- **B** B
- **C** C

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10 **Three of the parallelograms in the picture have the same area. Which one is the odd one out?**



- **A** A
- **B** B
- **C** C
- **D** D

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ANSWER KEY

1. 40 cm^2

2. 3 cm

3. 26 cm

4. 216 cm^2

5. They are equal

6. 84 m^2

7. 8 cm

8. 45 cm^2

9. C

10. D

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