

11+ Maths Practice Paper

Year 6 · Advanced

Lesson 6.3: Perimeter and area of 2D polygons

Read this with your child:

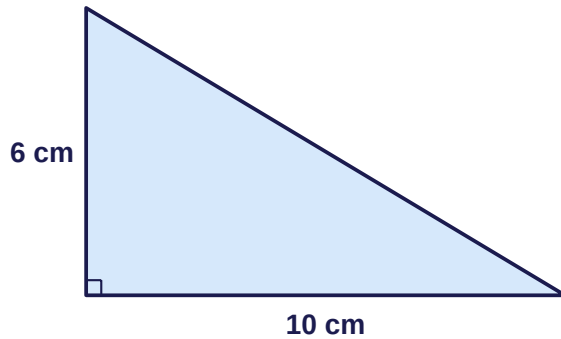
1. This paper has **27 questions** in two parts. Work through them in order. The questions get harder as you go.
2. **Part 1** is multiple choice. Choose **one** answer, A, B, C, D or E, and mark it on the separate answer sheet by drawing a firm line through the box next to its letter. If you change your mind, rub the line out completely and mark your new answer.
3. **Part 2** asks you to write your answer. Write it in the boxes on the answer sheet, **one digit in each box**, starting from the left.
4. If a question is hard, leave it and come back to it at the end.
5. You may use rough paper for working out. You may **not** use a calculator.
6. Suggested time: **35 minutes**.

The answer sheet is after the questions. The answers, with a short explanation of each, are at the back for a parent to mark with.

These are original practice questions written by Elite Learners in the style of 11+ entrance tests. They are not produced by, or connected with, GL Assessment or Cambridge University Press & Assessment (CEM).

Example

What is the area of the right-angled triangle?



- A** 30 cm^2 **B** 60 cm^2 **C** 16 cm^2 **D** 32 cm^2 **E** 15 cm^2

Answer: A It is half of a 10 by 6 rectangle: $10 \times 6 = 60$, and $60 \div 2 = 30 \text{ cm}^2$.

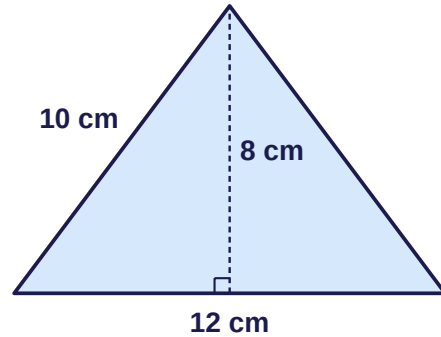
The answer, A, has already been marked on your answer sheet.

Now turn over and start Part 1.

Part 1: Multiple choice

1

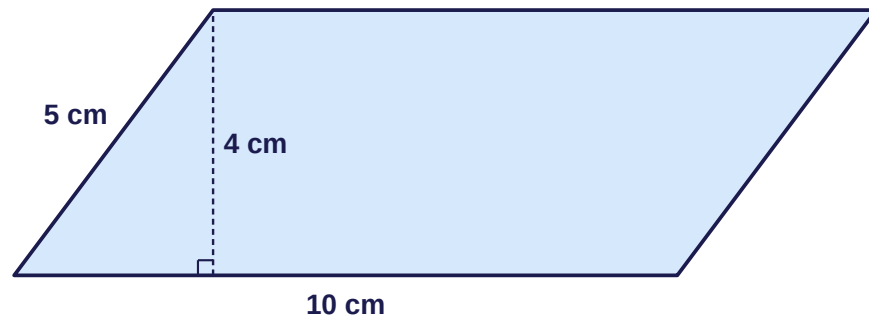
What is the area of the triangle?



- A** 96 cm^2 **B** 60 cm^2 **C** 120 cm^2 **D** 30 cm^2 **E** 48 cm^2

2

What is the area of the parallelogram?



- A** 50 cm^2 **B** 20 cm^2 **C** 30 cm^2 **D** 40 cm^2 **E** 25 cm^2

3

A triangle has an area of 35 cm^2 and a base of 10 cm.

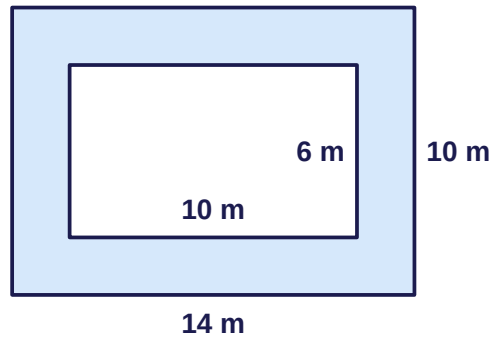
What is its height?

- A** 3.5 cm **B** 25 cm **C** 7 cm **D** 14 cm **E** 5 cm

4

A path goes all the way round a lawn.

What is the area of the shaded path?



- A** 80 m^2 **B** 140 m^2 **C** 60 m^2 **D** 48 m^2 **E** 200 m^2

5

A parallelogram has an area of 54 cm^2 . Its height is 6 cm.

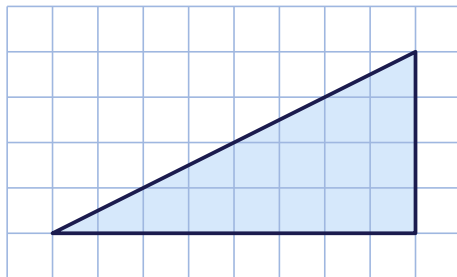
How long is its base?

- A** 48 cm **B** 9 cm **C** 12 cm **D** 4.5 cm **E** 27 cm

6

Each square is 1 cm^2 .

What is the area of the shaded triangle?

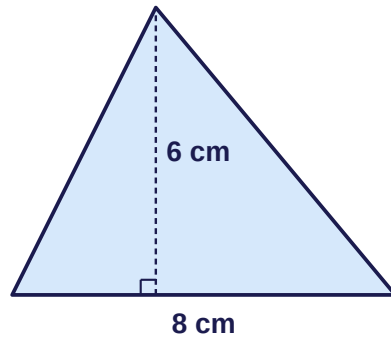


- A** 32 cm^2 **B** 12 cm^2 **C** 18 cm^2 **D** 16 cm^2 **E** 24 cm^2

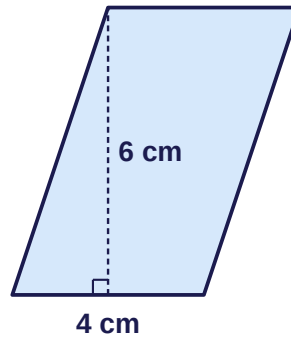
7

Shape A is a triangle. Shape B is a parallelogram.

Which of these is true?



Shape A



Shape B

- A** Shape A has the bigger area
- B** They have the same area
- C** Shape B has the bigger area
- D** Shape A has twice the area of B
- E** Shape B has twice the area of A

8

A square has an area of 49 cm^2 .

What is its perimeter?

- A** 14 cm
- B** 7 cm
- C** 28 cm
- D** 196 cm
- E** 24.5 cm

9

A rectangle is twice as long as it is wide. Its perimeter is 36 cm.

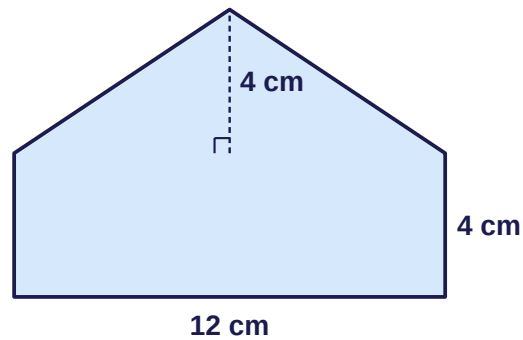
What is its area?

- A** 81 cm^2
- B** 36 cm^2
- C** 72 cm^2
- D** 18 cm^2
- E** 54 cm^2

10

The shape is a rectangle with a triangle on top.

What is the area of the whole shape?



- A 96 cm² B 48 cm² C 60 cm² D 72 cm² E 84 cm²

11

A picture 20 cm long and 15 cm wide has a frame 3 cm wide all the way round it.

What is the area of the frame?

- A 246 cm² B 300 cm² C 546 cm² D 210 cm² E 105 cm²

12

A lawn is a rectangle 12 m long and 8 m wide. Turf costs £6 for each square metre.

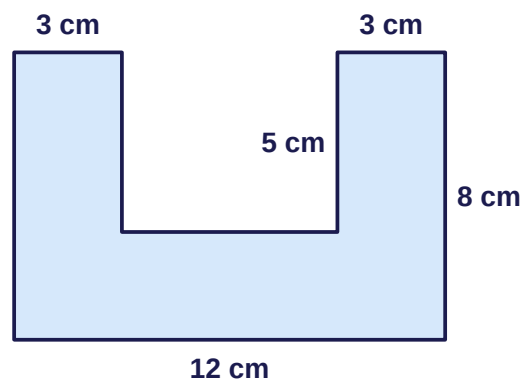
How much does it cost to turf the whole lawn?

- A £240 B £480 C £672 D £96 E £576

13

All the corners are right angles.

What is the area of the shape?



- A 96 cm² B 30 cm² C 51 cm² D 72 cm² E 66 cm²

14

A square has the same perimeter as a rectangle 10 cm long and 4 cm wide.

What is the area of the square?

- A** 40 cm^2 **B** 49 cm^2 **C** 28 cm^2 **D** 196 cm^2 **E** 14 cm^2

15

A wall is 4 m long and 3 m high. One tin of paint covers 5 m^2 .

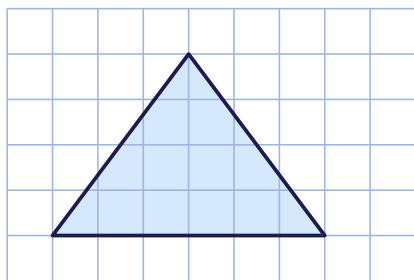
How many tins of paint must be bought to paint the wall?

- A** 3 **B** 2 **C** 4 **D** 12 **E** 1

16

Each square is 1 cm^2 .

What is the area of the shaded triangle?



- A** 24 cm^2 **B** 15 cm^2 **C** 10 cm^2 **D** 13 cm^2 **E** 12 cm^2

17

Two identical squares are put side by side to make a rectangle. The rectangle has a perimeter of 30 cm.

What is the area of the rectangle?

- A** 25 cm^2 **B** 60 cm^2 **C** 50 cm^2 **D** 100 cm^2 **E** 56 cm^2

18

Which of these has a different area from the others?

- A** a square with sides of 5 cm
B a rectangle 6 cm by 4 cm
C a triangle with base 8 cm and height 6 cm
D a parallelogram with base 6 cm and height 4 cm
E a triangle with base 12 cm and height 4 cm

19

A right-angled triangle has a base of 9 cm and a height of 7 cm.

What is its area?

- A** 63 cm^2 **B** 16 cm^2 **C** 32 cm^2 **D** 31.5 cm^2 **E** 31 cm^2

20

What is the perimeter of the parallelogram?



- A** 26 cm **B** 28 cm **C** 36 cm **D** 14 cm **E** 45 cm

Part 2: Write your answer

21

A triangle has a base of 14 cm and a height of 9 cm.

What is its area, in cm^2 ?

Write your answer in the boxes on the answer sheet, one digit in each box.

22

A parallelogram has a base of 15 cm and a height of 8 cm. Its sloping sides are 10 cm long.

What is its area, in cm^2 ?

Write your answer in the boxes on the answer sheet, one digit in each box.

23

A lawn is 9 m long and 5 m wide. A path 1 m wide goes all the way round it.

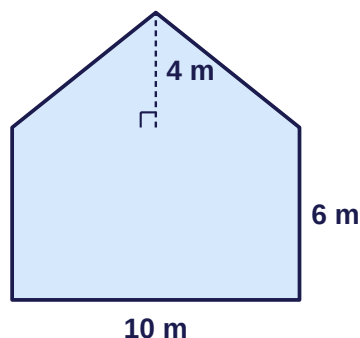
What is the area of the path, in m^2 ?

Write your answer in the boxes on the answer sheet, one digit in each box.

24

The end wall of a shed is a rectangle with a triangle on top.

What is its area, in m^2 ?



Write your answer in the boxes on the answer sheet, one digit in each box.

25

A rectangle has an area of 96 cm^2 and a perimeter of 40 cm.

How long is its longer side, in cm?

Write your answer in the boxes on the answer sheet, one digit in each box.

26

A field is a rectangle 45 m long and 25 m wide. A fence has a post at every corner and every 5 m along each side.

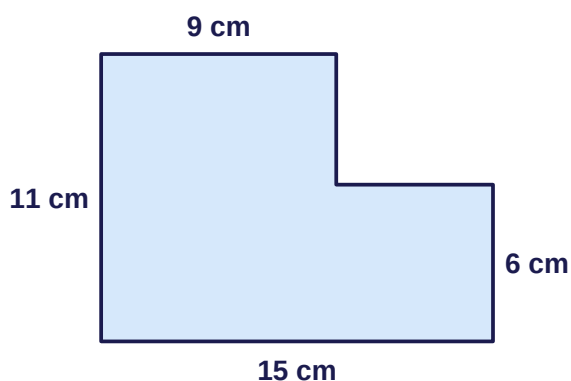
How many posts are there?

Write your answer in the boxes on the answer sheet, one digit in each box.

27

All the corners are right angles.

What is the perimeter of the shape, in cm?



Write your answer in the boxes on the answer sheet, one digit in each box.

Answer sheet

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Name

Draw a firm line through the box next to your answer, like the example.

Part 1: Multiple choice

Ex	A	☒	B	☐	C	☐	D	☐	E	☐
1	A	☐	B	☐	C	☐	D	☐	E	☐
2	A	☐	B	☐	C	☐	D	☐	E	☐
3	A	☐	B	☐	C	☐	D	☐	E	☐
4	A	☐	B	☐	C	☐	D	☐	E	☐
5	A	☐	B	☐	C	☐	D	☐	E	☐
6	A	☐	B	☐	C	☐	D	☐	E	☐
7	A	☐	B	☐	C	☐	D	☐	E	☐
8	A	☐	B	☐	C	☐	D	☐	E	☐
9	A	☐	B	☐	C	☐	D	☐	E	☐
10	A	☐	B	☐	C	☐	D	☐	E	☐
11	A	☐	B	☐	C	☐	D	☐	E	☐
12	A	☐	B	☐	C	☐	D	☐	E	☐
13	A	☐	B	☐	C	☐	D	☐	E	☐
14	A	☐	B	☐	C	☐	D	☐	E	☐
15	A	☐	B	☐	C	☐	D	☐	E	☐
16	A	☐	B	☐	C	☐	D	☐	E	☐
17	A	☐	B	☐	C	☐	D	☐	E	☐
18	A	☐	B	☐	C	☐	D	☐	E	☐
19	A	☐	B	☐	C	☐	D	☐	E	☐
20	A	☐	B	☐	C	☐	D	☐	E	☐

Part 2: Write your answer, one digit in each box

21			
22			
23			
24			
25			
26			
27			

Answers

For a parent to mark with. One mark for each question: the paper is out of 27. Talk through any your child got wrong, using the explanation.

Q	Answer	How to get it
1	E 48 cm ²	Base × height ÷ 2: $12 \times 8 = 96$, and $96 \div 2 = 48 \text{ cm}^2$. The 10 cm side is not the height.
2	D 40 cm ²	Base × height: $10 \times 4 = 40 \text{ cm}^2$. No halving, and the 5 cm side is not the height.
3	C 7 cm	Double the area to get the rectangle: $35 \times 2 = 70$. Then $70 \div 10 = 7 \text{ cm}$.
4	A 80 m ²	The whole thing is $14 \times 10 = 140$. The lawn is $10 \times 6 = 60$. $140 - 60 = 80 \text{ m}^2$.
5	B 9 cm	Base × height = area, so base × 6 = 54. $54 \div 6 = 9 \text{ cm}$.
6	D 16 cm ²	It is half of the 8 by 4 rectangle round it: $8 \times 4 = 32$, and $32 \div 2 = 16 \text{ cm}^2$.
7	B They have the same area	A: $8 \times 6 \div 2 = 24 \text{ cm}^2$. B: $4 \times 6 = 24 \text{ cm}^2$. They are the same.
8	C 28 cm	Each side is 7 cm, because $7 \times 7 = 49$. The perimeter is $4 \times 7 = 28 \text{ cm}$.
9	C 72 cm ²	Length + width = $36 \div 2 = 18$, which is 3 equal parts, so the width is 6 cm and the length 12 cm. $12 \times 6 = 72 \text{ cm}^2$.
10	D 72 cm ²	The rectangle is $12 \times 4 = 48$. The triangle is $12 \times 4 \div 2 = 24$. $48 + 24 = 72 \text{ cm}^2$. (96 forgets to halve the triangle.)
11	A 246 cm ²	With the frame it is 26 cm by 21 cm: $26 \times 21 = 546$. Take away the picture, $20 \times 15 = 300$: $546 - 300 = 246 \text{ cm}^2$.
12	E £576	The area is $12 \times 8 = 96 \text{ m}^2$, and $96 \times £6 = £576$. (£240 uses the perimeter.)
13	E 66 cm ²	The big rectangle is $12 \times 8 = 96$. The gap is $12 - 3 - 3 = 6 \text{ cm}$ across and 5 cm deep: $6 \times 5 = 30$. $96 - 30 = 66 \text{ cm}^2$.
14	B 49 cm ²	The rectangle's perimeter is $10 + 4 + 10 + 4 = 28 \text{ cm}$. Each side of the square is $28 \div 4 = 7 \text{ cm}$, so its area is $7 \times 7 = 49 \text{ cm}^2$.
15	A 3	The area is $4 \times 3 = 12 \text{ m}^2$. 2 tins cover only 10 m^2 , so 3 tins are needed (you cannot buy part of a tin).
16	E 12 cm ²	Its base is 6 squares and its height is 4 squares: $6 \times 4 \div 2 = 12 \text{ cm}^2$.
17	C 50 cm ²	6 sides of a small square go round the rectangle, so each side is $30 \div 6 = 5 \text{ cm}$. The rectangle is 10 cm by 5 cm: $10 \times 5 = 50 \text{ cm}^2$.
18	A a square with sides of 5 cm	The square is $5 \times 5 = 25 \text{ cm}^2$. All the others are 24 cm^2 : 6×4 , $8 \times 6 \div 2$, 6×4 and $12 \times 4 \div 2$.
19	D 31.5 cm ²	$9 \times 7 = 63$, and half of 63 is 31.5 cm^2 .
20	B 28 cm	Add the four sides: $9 + 5 + 9 + 5 = 28 \text{ cm}$. The 4 cm height is not a side. (36 is its area.)
21	63	$14 \times 9 = 126$, and $126 \div 2 = 63 \text{ cm}^2$.
22	120	Base × height: $15 \times 8 = 120 \text{ cm}^2$. The 10 cm sides are not needed.

Q	Answer	How to get it
23	32	With the path it is 11 m by 7 m: $11 \times 7 = 77$. Take away the lawn, $9 \times 5 = 45$: $77 - 45 = 32 \text{ m}^2$.
24	80	The rectangle is $10 \times 6 = 60$. The triangle is $10 \times 4 \div 2 = 20$. $60 + 20 = 80 \text{ m}^2$.
25	12	Length + width = $40 \div 2 = 20$, and length $\times$ width = 96. $12 + 8 = 20$ and $12 \times 8 = 96$, so the longer side is 12 cm.
26	28	The perimeter is $45 + 25 + 45 + 25 = 140$ m. Going all the way round, there is one post for every 5 m: $140 \div 5 = 28$ posts.
27	52	The missing sides are $15 - 9 = 6$ cm and $11 - 6 = 5$ cm. $15 + 6 + 6 + 5 + 9 + 11 = 52$ cm.

Score: out of 27