

Areas Of Shapes

Please write clearly in block capitals

Forename:

Surname:

Materials

For this paper you must have:

- mathematical instruments



You **can** use a calculator.

Instructions

- Use black ink or black ball-point pen. Draw diagrams in pencil.
- Fill in the boxes at the top of this page.
- Answer all questions.
- You must answer the questions in the spaces provided. Do not write outside the box around each page or on blank pages.
- Do all rough work in this book. Cross through any work you do not want to be marked.

Information

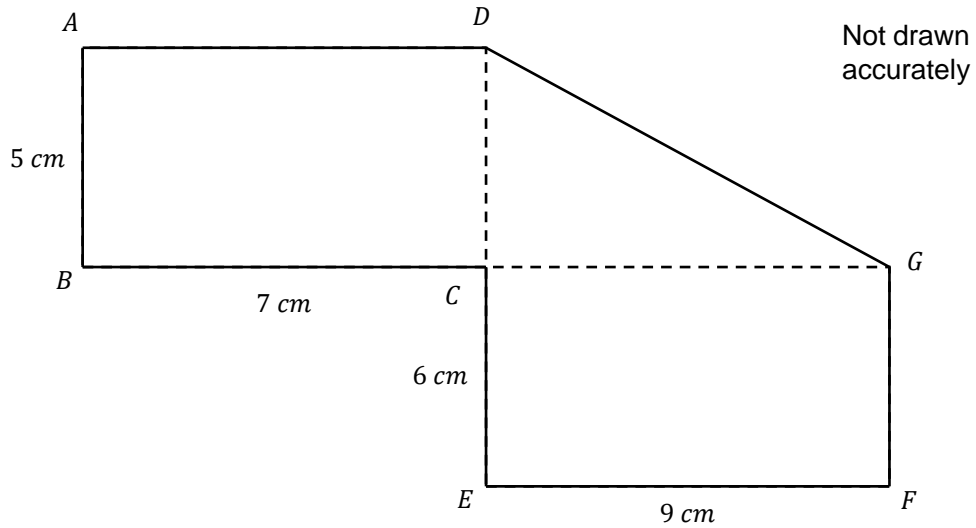
- The marks for questions are shown in brackets.
- You may ask for graph paper, tracing paper and more answer paper. These must be tagged securely to this answer book.

Advice

- In all calculations, show clearly how you work out your answer.

1 The diagram shows a plan of some cardboard packaging.

(Level 3)



Calculate the total area of the cardboard used.

[3 marks]

Answer _____ cm^2

Turn over for next question

2 The diagram shows the floor plan of a storeroom

(Level 4)

The owner has ordered 14 items that each need at least 200 cm^2 of floor space.

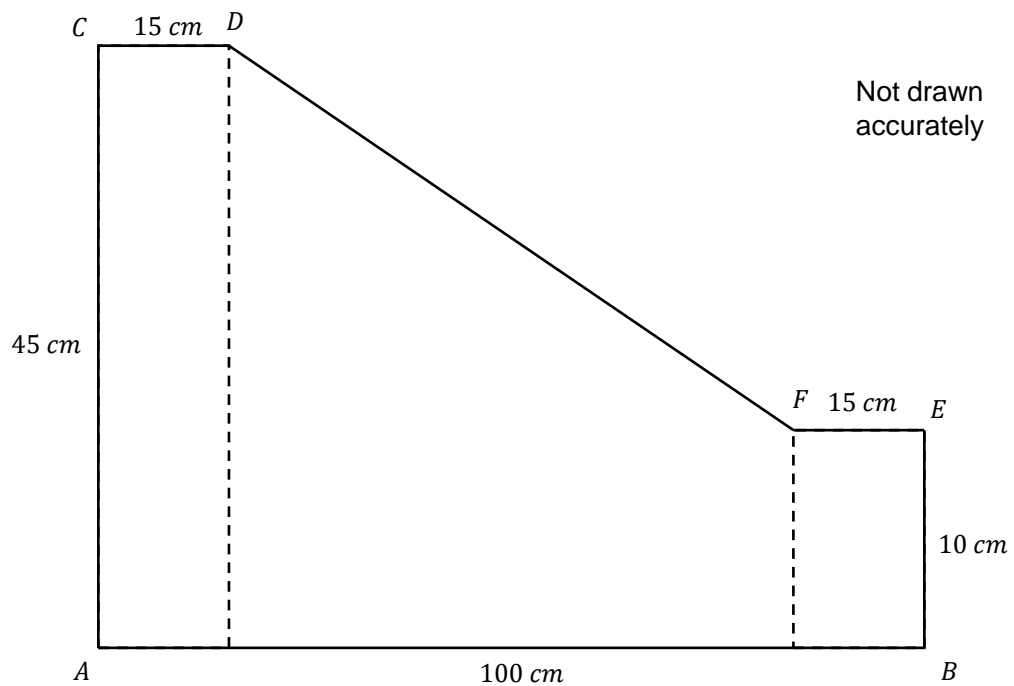
$$CD = 15 \text{ cm}$$

$$CA = 45 \text{ cm}$$

$$AB = 100 \text{ cm}$$

$$FE = 15 \text{ cm}$$

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



Is there enough room in the storeroom for all the items?

You **must** show your working.

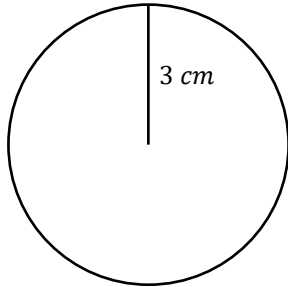
[3 marks]

Answer _____

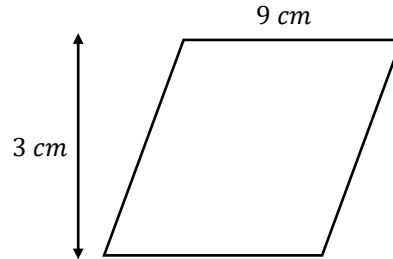
3 Circle two of the four shapes below, which have the same area.

(Level 4)

[2 marks]

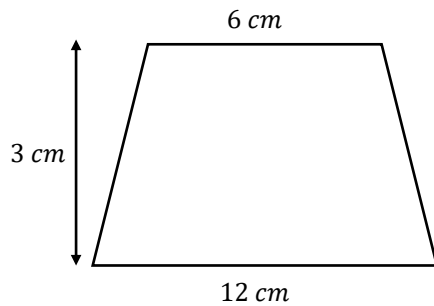


A

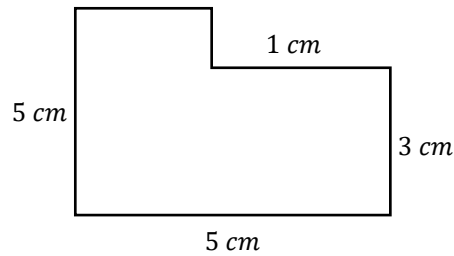


B

Not drawn accurately



C



D



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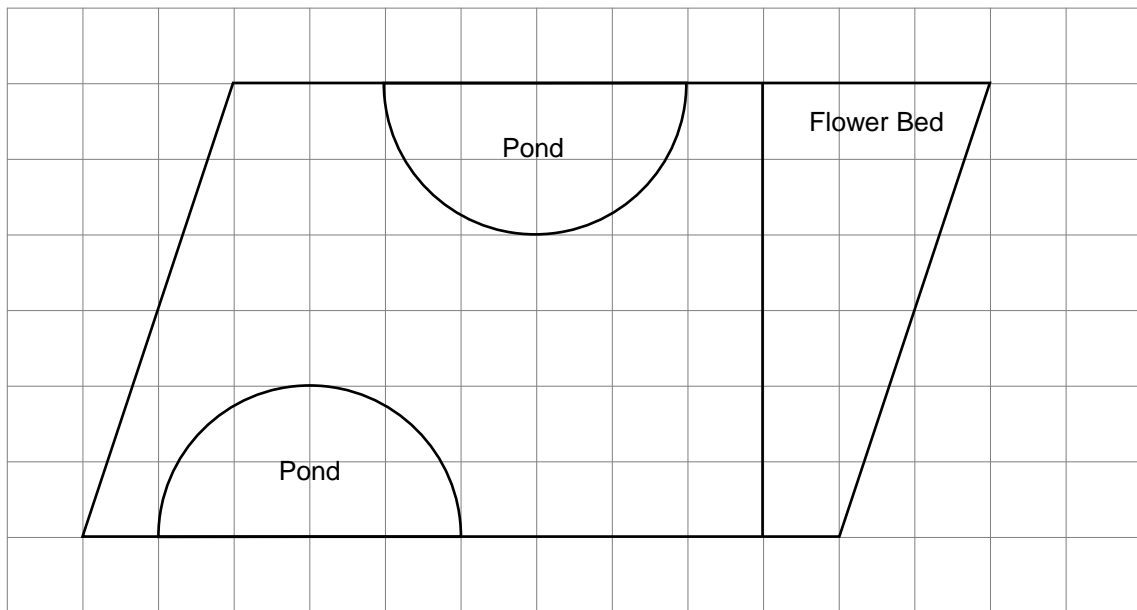
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- 4 A gardener is planning a new garden that is in the shape of a parallelogram. It features two ponds and a flower bed. (Level 4)

The rest of the space will be filled with grass.

The plan of the garden has been drawn to scale on a 1 cm grid labelled below.

1 cm = 5 m



Calculate the area that will be covered with grass.

Give your answer to 2 decimal places.

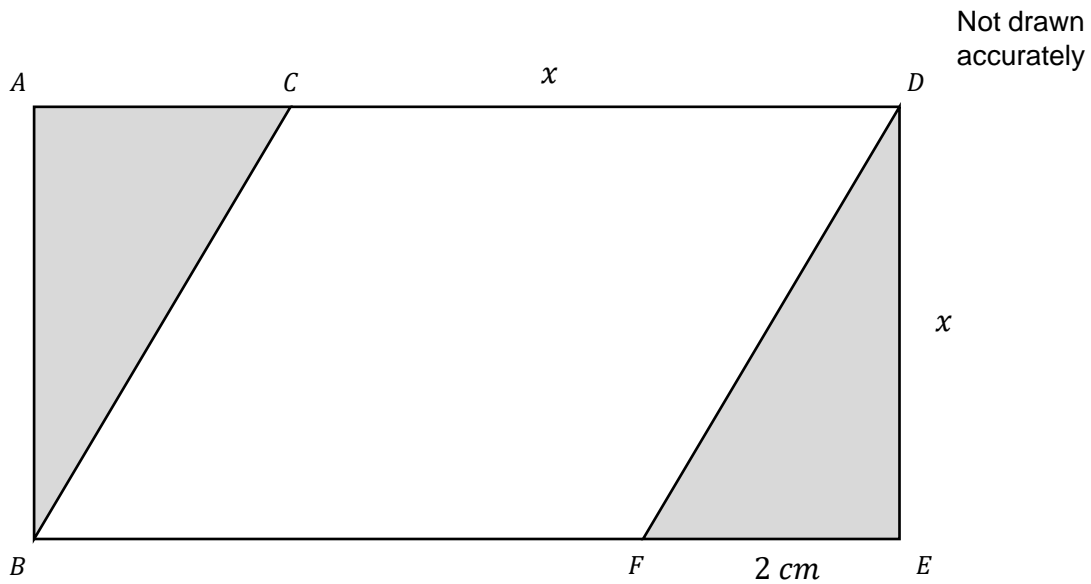
[3 marks]

Answer _____ m²

Turn over for next question

- 5 In the diagram the combined area of triangles ACB and FDE are equal to the area of the parallelogram BCDF. (Level 5)

$$\begin{aligned} CD &= x \\ DE &= x \\ FE &= 2 \text{ cm} \end{aligned}$$



Find the value of x .

[3 marks]

$$x = \underline{\hspace{10em}}$$



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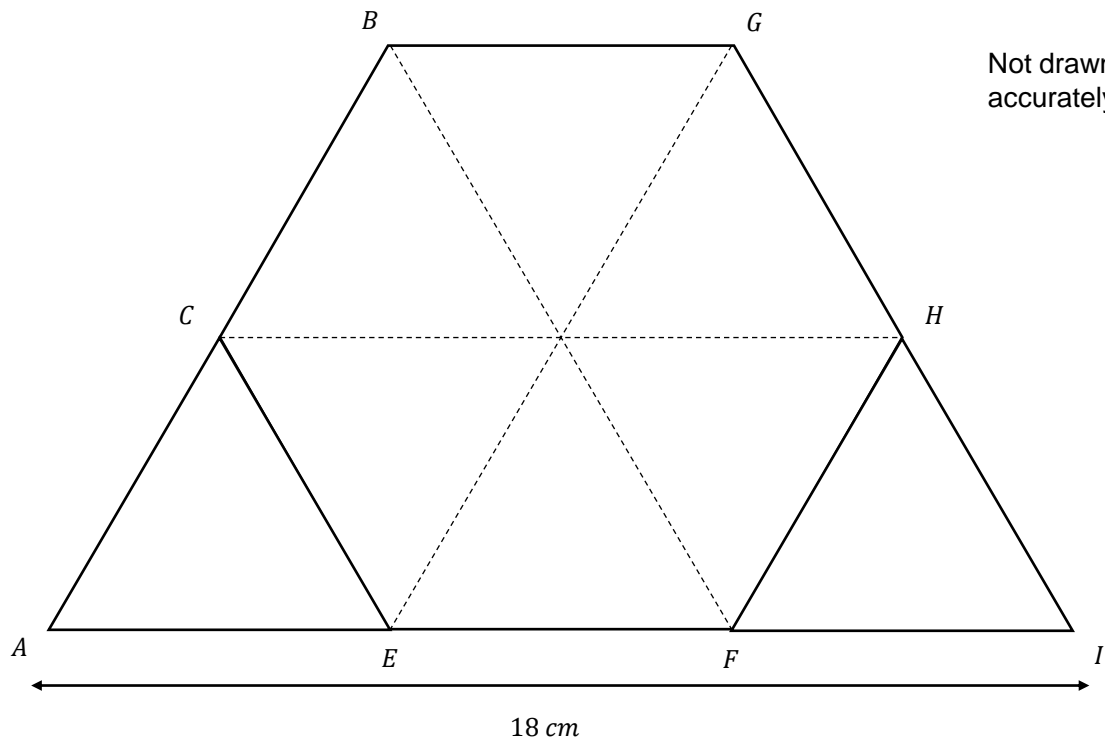
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- 6 The diagram shows a regular hexagon set inside a trapezium.

(Level 5)



Find the area of the regular hexagon BGHFEC.

Give your answer to 2 decimal places.

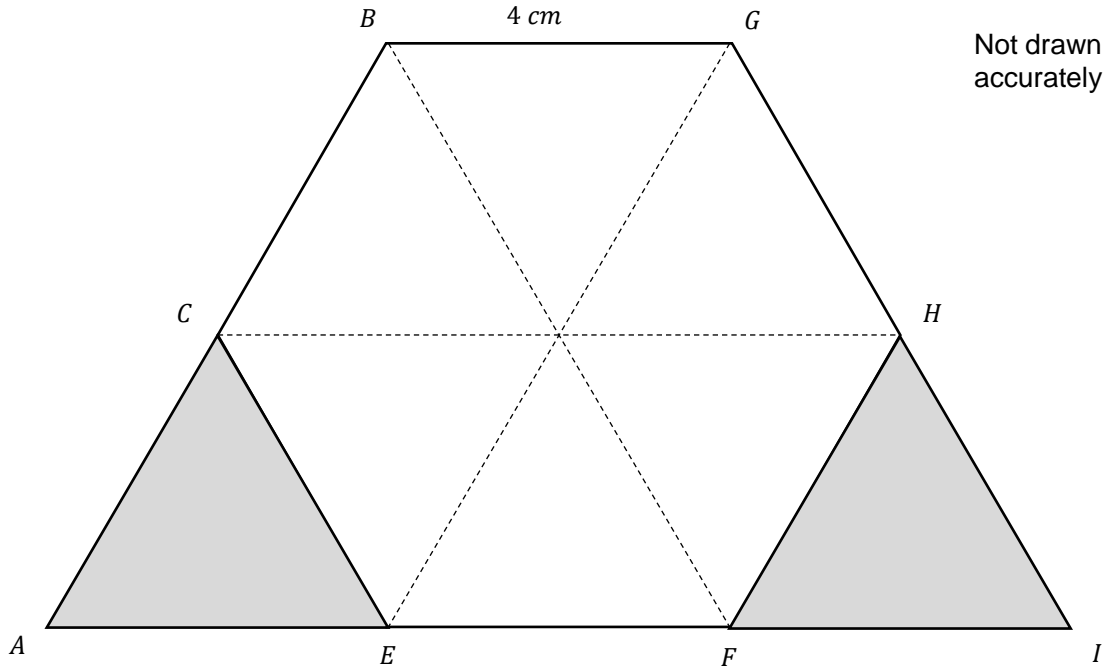
[3 marks]

Answer _____

Turn over for next question

7 The diagram shows a regular hexagon set inside an isosceles trapezium. (Level 5)

$$BG = 4 \text{ cm}$$



Not drawn accurately

Find the exact total area of the shaded triangles ACE and FHI .

[3 marks]

Answer _____

End of Questions