

Surname						Other Names					
Centre Number						Candidate Number					
Candidate Signature											

For Examiner's Use

Free-Standing Mathematics Qualification
 June 2008
 Foundation Level



WORKING IN 2 AND 3 DIMENSIONS
Unit 2

6982/2

Wednesday 14 May 2008 1.30 pm to 2.30 pm

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|--|
| <p>For this paper you must have:</p> <ul style="list-style-type: none"> • a calculator • a clean copy of the Data Sheet (enclosed) • a pair of compasses • a protractor • a ruler. |
|--|

For Examiner's Use			
Question	Mark	Question	Mark
1		9	
2			
3			
4			
5			
6			
7			
8			
Total (Column 1) →			
Total (Column 2) →			
TOTAL			
Examiner's Initials			

Time allowed: 1 hour

Instructions

- Use black ink or black ball-point pen. Pencil should only be used for drawing.
- Fill in the boxes at the top of this page.
- Answer **all** questions.
- You must answer the questions in the spaces provided. Answers written in margins or on blank pages will not be marked.
- Do all rough work in this book. Cross through any work you do not want to be marked.
- You may **not** refer to the copy of the Data Sheet that was available prior to this examination. A clean copy is enclosed for your use.

Information

- The maximum mark for this paper is 40.
- The marks for questions are shown in brackets.
- You are expected to use a calculator where appropriate.

Advice

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

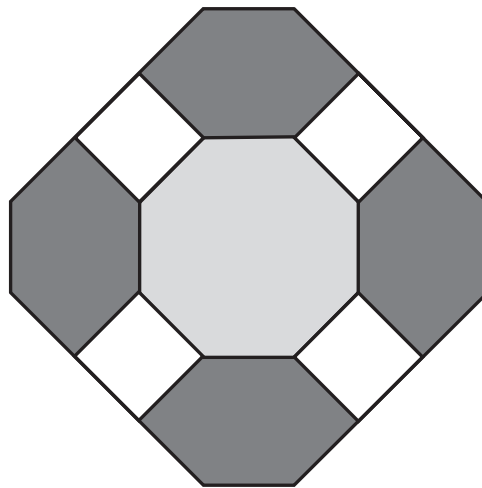


SECTION A

Answer **all** questions in the spaces provided.

Use **Bathroom floor tiles and washstands** on page 2 of the Data Sheet.

- 1 The diagram below shows part of the Victorian tile pattern.



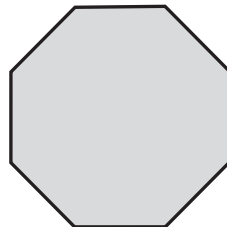
- 1 (a) What is the order of rotational symmetry of this diagram?

Answer.....
(1 mark)

- 1 (b) Draw all lines of symmetry on the diagram above.

(2 marks)

- 1 (c) The tile in the centre of the diagram is shown below.



What is the mathematical name of this shape?

Answer.....
(1 mark)

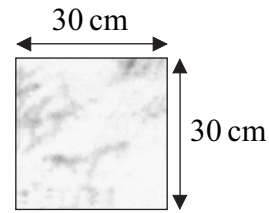
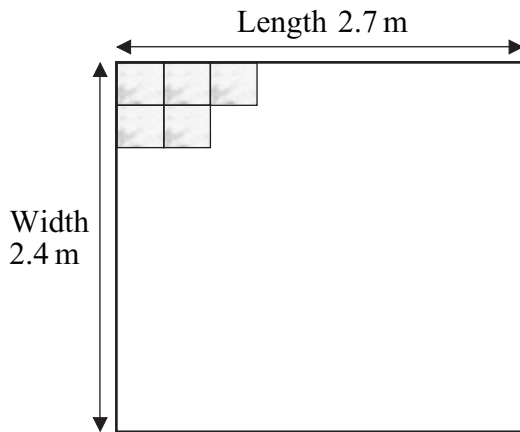


2 A bathroom is 2.7 metres long and 2.4 metres wide.

2 (a) Convert these measurements into centimetres.

Length = cm

Width = cm
(2 marks)



Not to scale

2 (b) Square tiles of side 30 centimetres are used to cover the floor.

2 (b) (i) How many tiles fit along the length of the floor?

.....

Answer.....
(1 mark)

2 (b) (ii) How many tiles fit along the width of the floor?

.....

Answer.....
(1 mark)

2 (b) (iii) How many tiles cover the floor?

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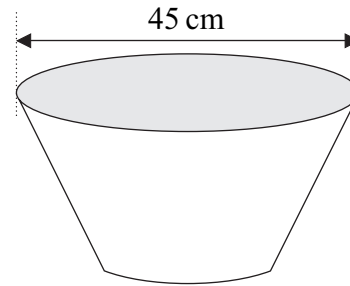
Answer.....
(2 marks)

Turn over ►



- 3 The circular top of the modern washstand has a diameter of 45 centimetres.

Calculate the area of this circle.



.....

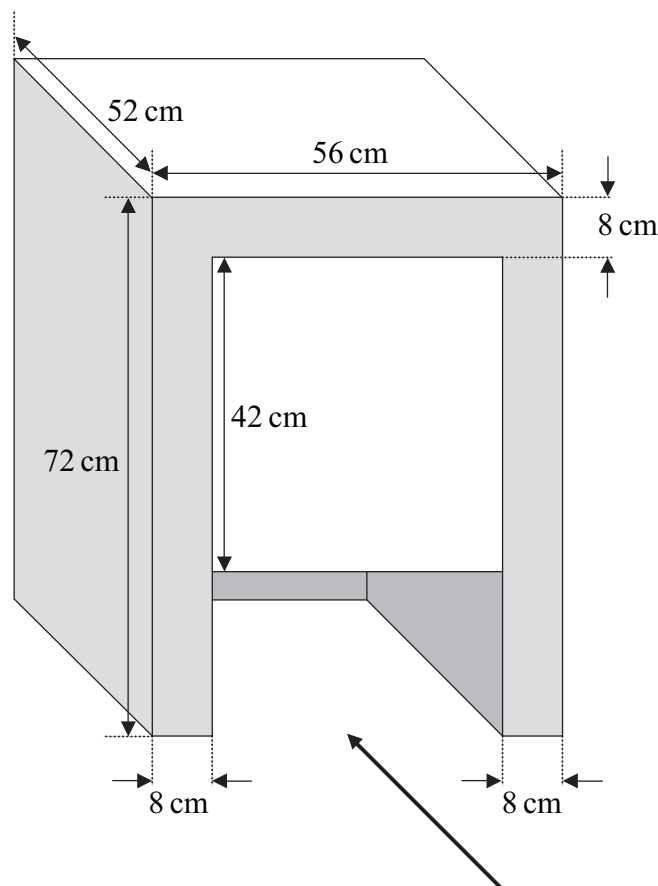
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Answer..... (3 marks)

3

- 4 The diagram below shows the dimensions of the base of the modern washstand. On the page opposite, draw an accurate front elevation of the base from the direction of the arrow. Use a scale of 1:5. Show how you calculate the measurements for your front elevation.



.....

.....

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(5 marks)

Turn over for the next question

5

Turn over ►

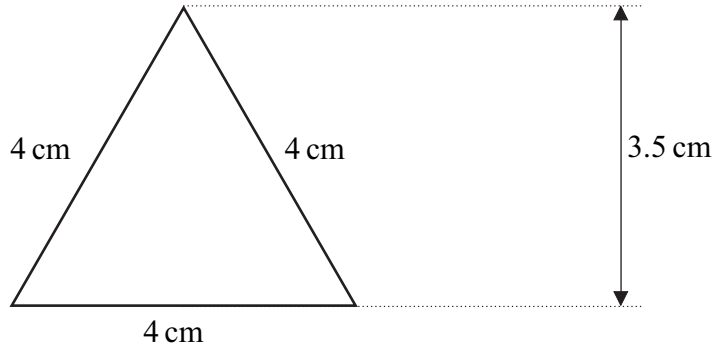


SECTION B

Answer **all** questions in the spaces provided.

Use **Chocolate bars** on page 3 of the Data Sheet.

5 The diagram below shows the cross-section of a chocolate bar.



5 (a) What type of triangle is this?

Answer.....
(1 mark)

5 (b) (i) Calculate the area of the triangle.

.....
.....
.....

Answer.....
(2 marks)

5 (b) (ii) The chocolate bar is 21 centimetres long.
Calculate its volume.

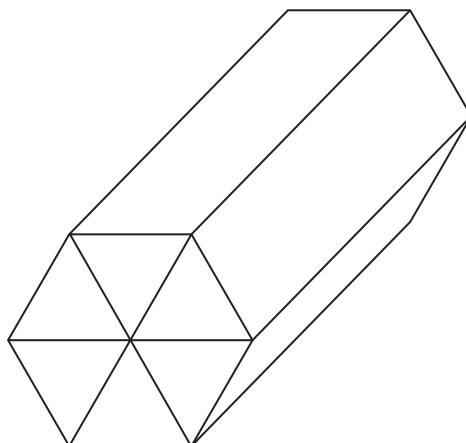
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Answer.....
(2 marks)

5



- 6 The diagram shows the multi-pack of six chocolate bars.



Follow the instructions, in (a) to (c) below, to draw an accurate cross-section of the multi-pack.

Use a **pencil, ruler and compasses only**, leaving **all** construction lines on your diagram.

- 6 (a) In the space below draw a circle of radius 4 cm.

(1 mark)

- 6 (b) Construct a regular hexagon with sides 4 cm long inside the circle.

(2 marks)

- 6 (c) Draw all the diagonals of the hexagon.

(1 mark)

4

Turn over ►

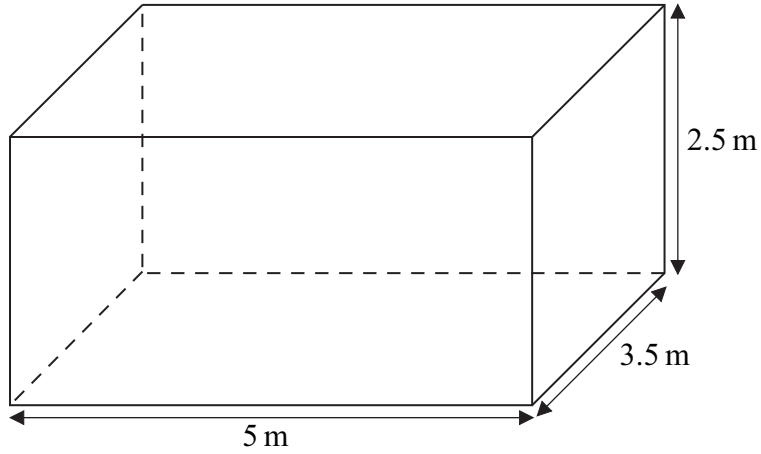


SECTION C

Answer **all** questions in the spaces provided.

Use **Sound studio** on page 4 of the Data Sheet.

7 The diagram below shows the internal dimensions of the sound studio.



Calculate the volume of the sound studio.
State the units.

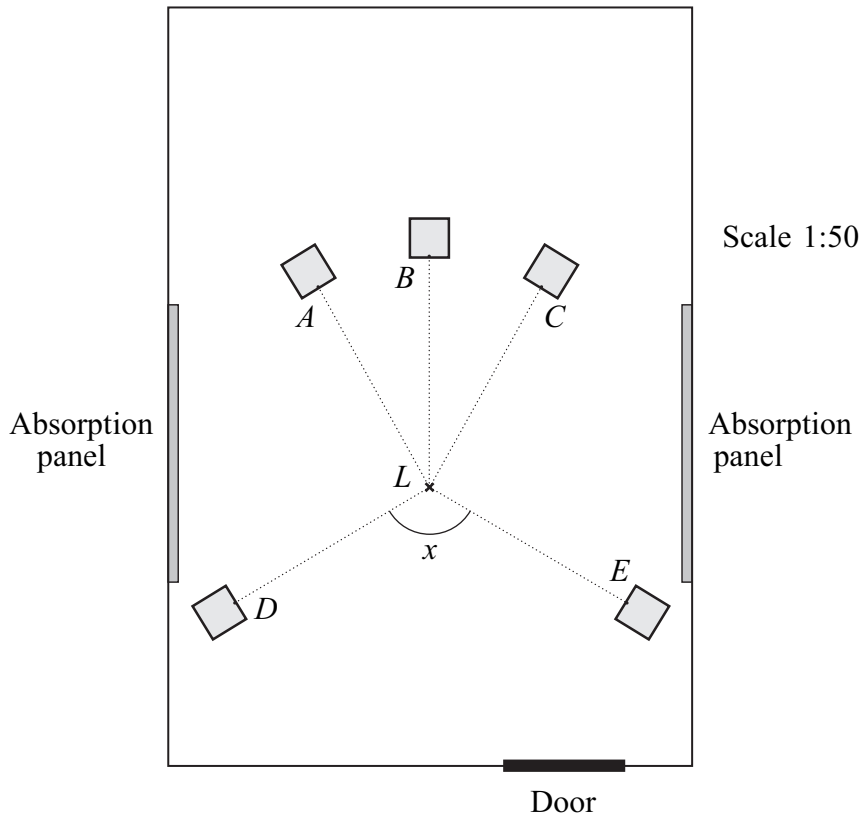
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Answer..... (3 marks)

3



8 This plan of the sound studio is drawn to a scale of 1:50 .



8 (a) (i) Measure the angle marked x on the plan.

Answer.....
(1 mark)

8 (a) (ii) What is the size of this angle in the actual sound studio?

Answer.....
(1 mark)

8 (b) (i) Measure the length of the line AL on the plan.
Give your answer in **millimetres**.

Answer.....
(1 mark)

8 (b) (ii) Calculate the length AL in the actual sound studio.
Give your answer in **metres**.

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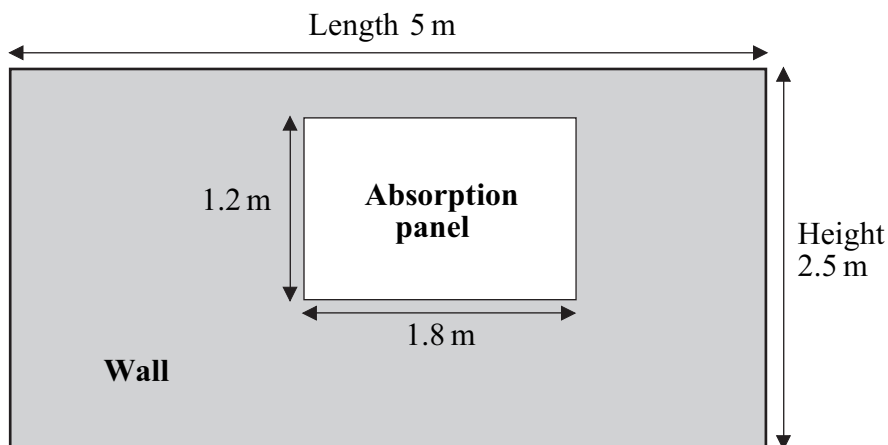
Answer.....
(3 marks)

6

Turn over ►



9 The diagram below shows one wall of the sound studio.



Calculate the shaded area.

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Answer..... (4 marks)

4

END OF QUESTIONS



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