

|                           |  |                          |  |
|---------------------------|--|--------------------------|--|
| <b>Candidate Forename</b> |  | <b>Candidate Surname</b> |  |
|---------------------------|--|--------------------------|--|

|                      |  |  |  |  |  |                         |  |  |  |  |
|----------------------|--|--|--|--|--|-------------------------|--|--|--|--|
| <b>Centre Number</b> |  |  |  |  |  | <b>Candidate Number</b> |  |  |  |  |
|----------------------|--|--|--|--|--|-------------------------|--|--|--|--|

**OXFORD CAMBRIDGE AND RSA EXAMINATIONS  
GENERAL CERTIFICATE OF SECONDARY EDUCATION**

**B275B**

**MATHEMATICS C  
(GRADUATED ASSESSMENT)**

**MODULE M5 (SECTION B)**

**MONDAY 21 JUNE 2010: Afternoon**

**DURATION: 30 minutes**

**SUITABLE FOR VISUALLY IMPAIRED CANDIDATES**

**Candidates answer on the Question Paper**

**OCR SUPPLIED MATERIALS:**

**None**

**OTHER MATERIALS REQUIRED:**

**Geometrical instruments**

**Tracing paper (optional)**

**Pie chart scale (optional)**

**Electronic calculator**

**READ INSTRUCTIONS OVERLEAF**

## **INSTRUCTIONS TO CANDIDATES**

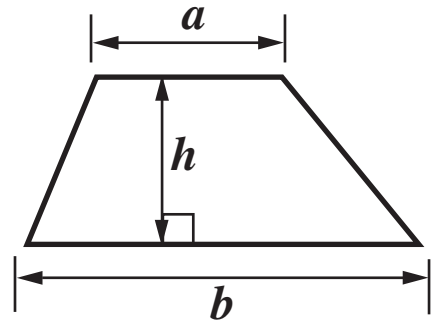
- Write your name clearly in capital letters, your Centre Number and Candidate Number in the boxes on the first page.
- Use black ink. Pencil may be used for graphs and diagrams only.
- Read each question carefully and make sure that you know what you have to do before starting your answer.
- Show your working. Marks may be given for a correct method even if the answer is incorrect.
- Answer ALL the questions.
- Write your answer to each question in the space provided. Additional paper may be used if necessary but you must clearly show your Candidate Number, Centre Number and question number(s).

## **INFORMATION FOR CANDIDATES**

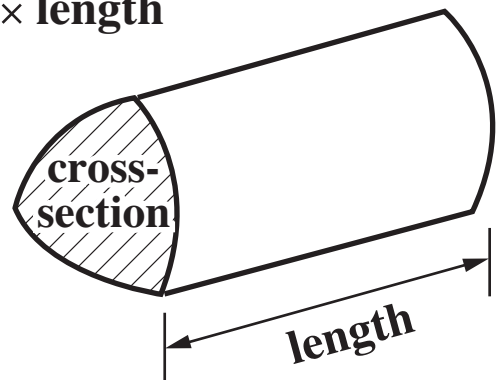
- The number of marks is given in brackets [ ] at the end of each question or part question.
- Section B starts with question 7.
- You are expected to use a calculator in Section B of this paper.
- The total number of marks for this Section is 25.

## FORMULAE SHEET

Area of trapezium =  $\frac{1}{2} (a + b)h$



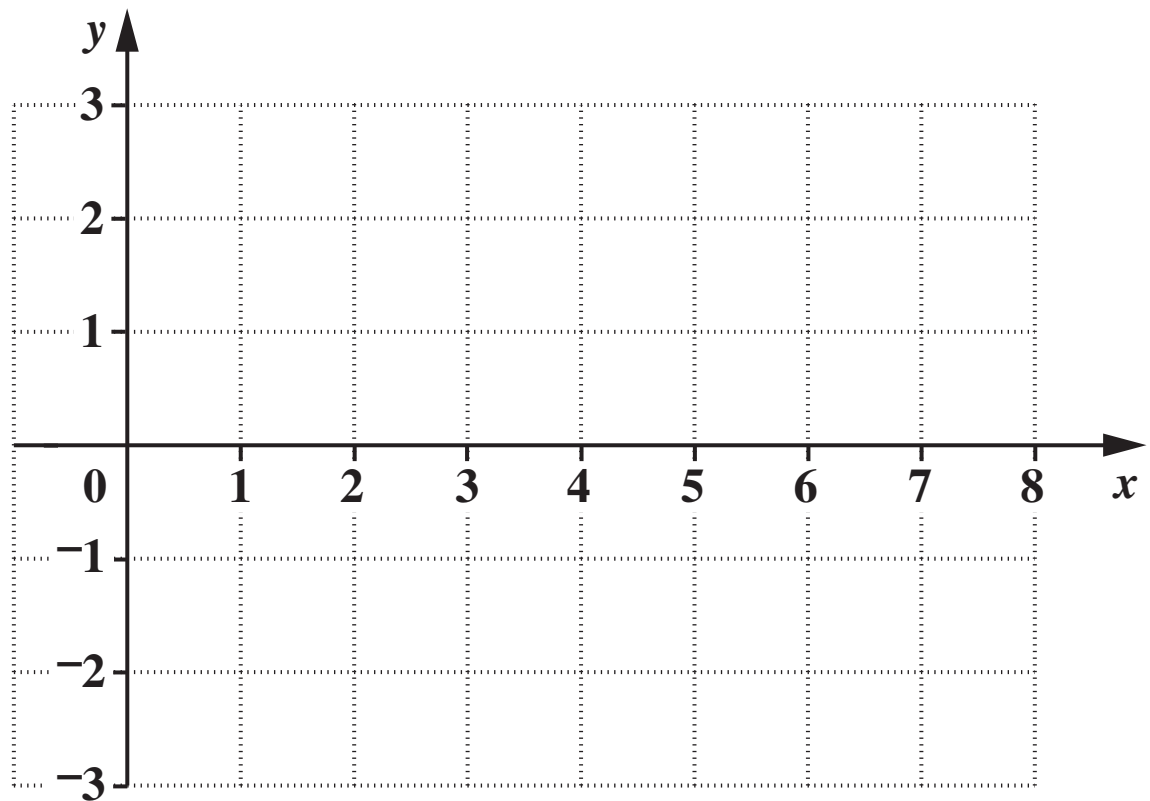
Volume of prism = (area of cross-section)  $\times$  length



- 7 (a) Complete this table for  $y = \frac{1}{2}x - 2$ .  
[1 mark]

|     |   |   |   |
|-----|---|---|---|
| $x$ | 2 | 4 | 8 |
| $y$ |   | 0 |   |

- (b) Draw the graph of  $y = \frac{1}{2}x - 2$ .  
[2 marks]



**8 Solve.**

(a)  $\frac{x}{10} = 8$

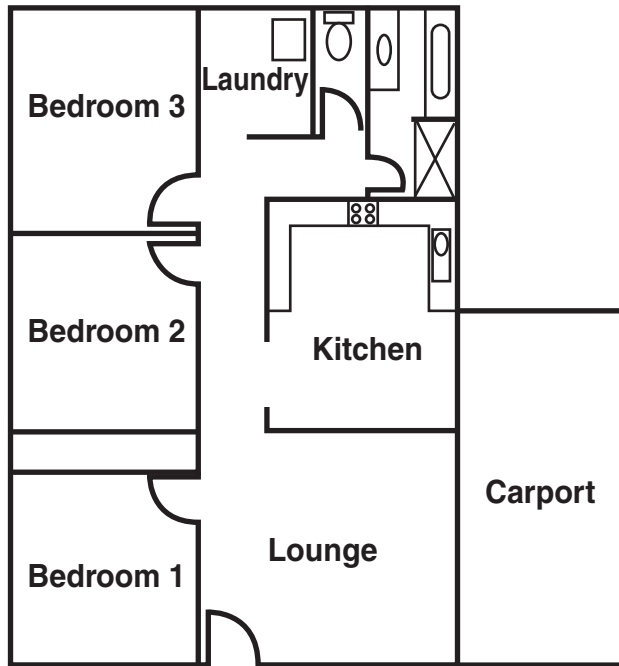
[1 mark]

(a) \_\_\_\_\_

(b)  $11 = 3x - 1$   
[2 marks]

(b) \_\_\_\_\_

**9 This is a plan of a bungalow.**



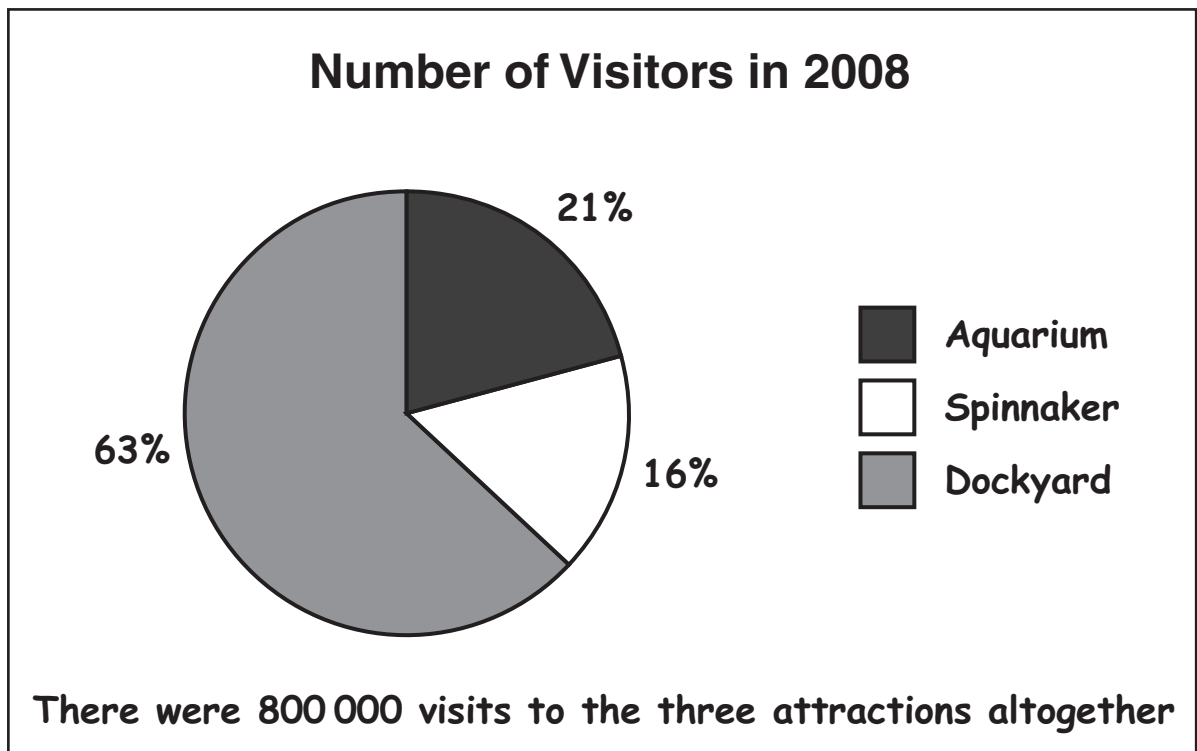
Scale: 1 cm to 2 m

**What is the area of bedroom 3 in square metres?  
[2 marks]**

\_\_\_\_\_ m<sup>2</sup>

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**10 Suki looks up the numbers of visitors to three attractions in Portsmouth and finds this pie chart.**



**(a) Which attraction was the least popular?  
[1 mark]**

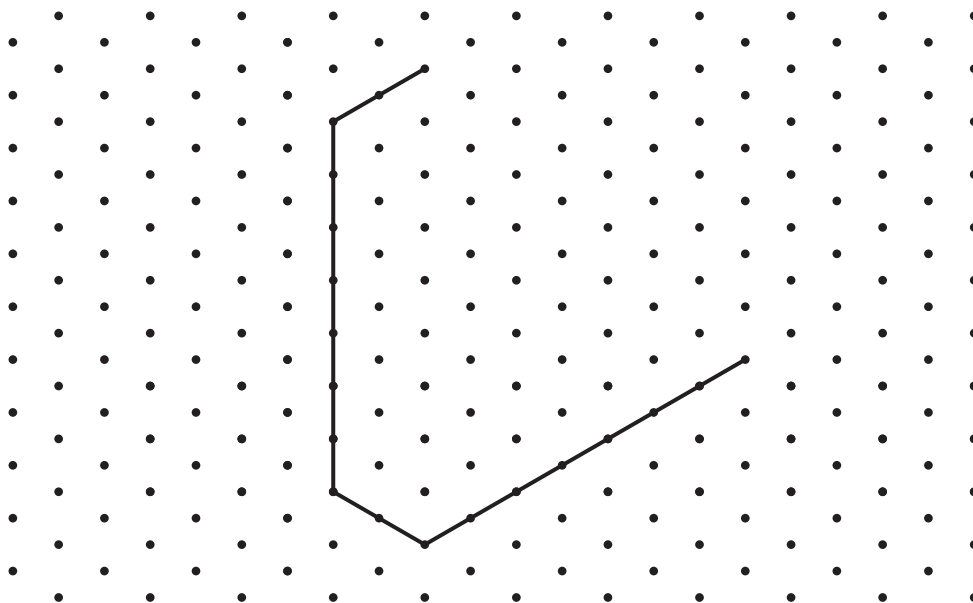
**(a)** \_\_\_\_\_



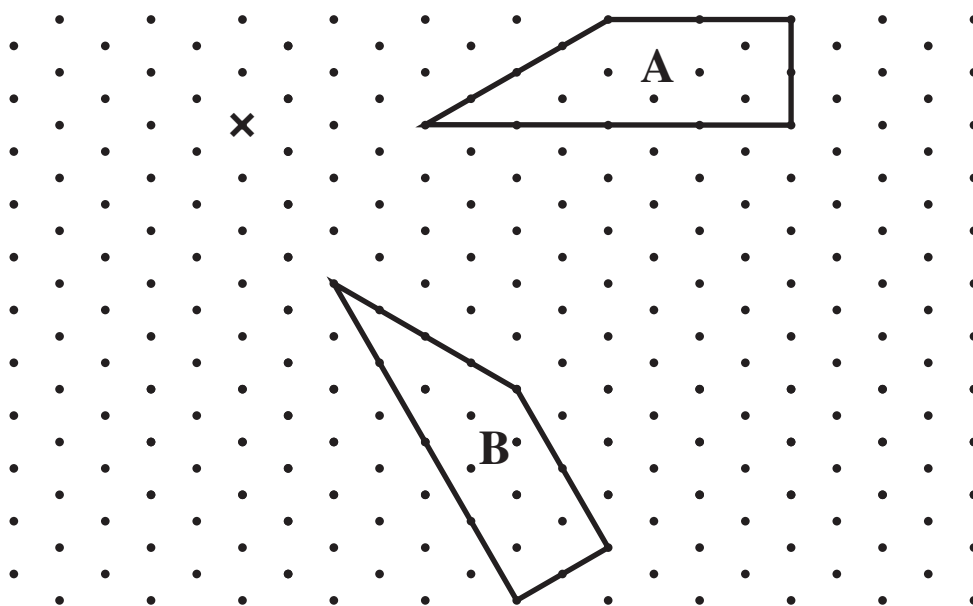
**(b) How many people visited the Aquarium?  
[2 marks]**

**(b)** \_\_\_\_\_

- 11 (a) Complete this shape by drawing two straight lines so that the finished shape has rotation symmetry of order 3.  
[2 marks]



- (b) Shape A has been rotated clockwise to shape B.  
The centre of rotation is marked  $\times$ .



What angle has shape A been rotated through to map onto shape B?  
[1 mark]

(b) \_\_\_\_\_°

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**12 (a) Work out.**

**(i)  $5^3$**   
**[1 mark]**

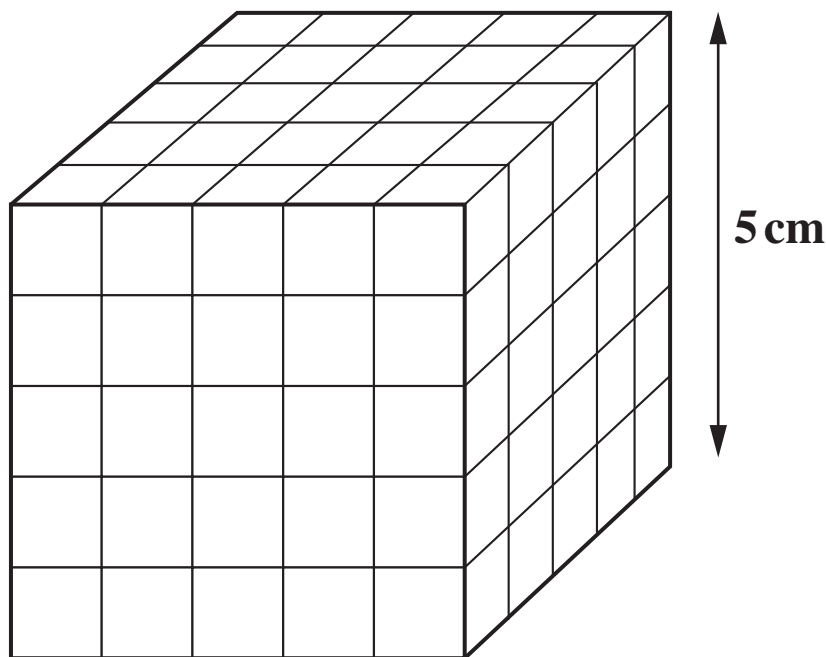
**(a)(i)** \_\_\_\_\_

**(ii)  $\sqrt{10}$**

**Give your answer correct to 1 decimal place.**  
**[2 marks]**

**(ii)** \_\_\_\_\_

**(b) Carla makes this cube using centimetre cubes.**



**(i) What is the volume of Carla's cube?**  
**[1 mark]**

**(b)(i)** \_\_\_\_\_ **cm<sup>3</sup>**

- (ii) Carla wants to make a cuboid that is 1 cm longer and 1 cm higher but the same width as her cube.**

**How many centimetre cubes does Carla need to ADD to her cube to make this cuboid?  
[3 marks]**

**(ii) \_\_\_\_\_**

- 13 (a) Death Valley is a low-lying valley in the United States surrounded by mountains.  
Here is some information about Death Valley.**

|                            |  |                      |
|----------------------------|--|----------------------|
| <b>Highest temperature</b> | <b>58°C</b>                              | <b>Furnace Creek</b> |
| <b>Lowest temperature</b>  | <b>-9°C</b>                              | <b>Furnace Creek</b> |
| <b>Highest point</b>       | <b>4421 m <u>ABOVE</u><br/>sea level</b> | <b>Mount Whitney</b> |
| <b>Lowest point</b>        | <b>86 m <u>BELOW</u><br/>sea level</b>   | <b>Badwater</b>      |

- (i) How many metres is the top of Mount Whitney above Badwater?  
[1 mark]**

**(a)(i) \_\_\_\_\_ m**

- (ii) As some climbers start to climb Mount Whitney the temperature is  $-2^{\circ}\text{C}$ .  
The temperature at the top of Mount Whitney is  $16^{\circ}\text{C}$  lower than this.

What is the temperature at the top of Mount Whitney?  
[1 mark]

(ii) \_\_\_\_\_  $^{\circ}\text{C}$

- (b) Here is some information about the depth, below sea level, of two of the lowest places in the UK.

|               |                     |
|---------------|---------------------|
| Canvey Island | 6 m below sea level |
| The Fens      | 4 m below sea level |

What fraction is The Fens' depth of Canvey Island's depth?

Give your answer in its lowest terms.

[2 marks]

(b) \_\_\_\_\_



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