

Candidate Forename		Candidate Surname	
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Centre Number						Candidate Number				
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**OXFORD CAMBRIDGE AND RSA EXAMINATIONS  
GENERAL CERTIFICATE OF SECONDARY EDUCATION**

**B271B**

**MATHEMATICS C  
(GRADUATED ASSESSMENT)**

**MODULE M1 – SECTION B**

**THURSDAY 21 JANUARY 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)**

**Electronic calculator**

**READ INSTRUCTIONS OVERLEAF**

## **INSTRUCTIONS TO CANDIDATES**

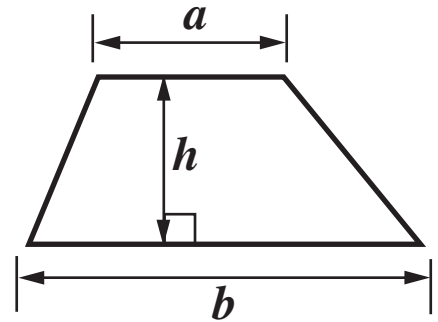
- **Write your name clearly in capital letters, your Centre Number and Candidate Number in the boxes on the first page.**
- **Use black ink. Pencil may be used for graphs and diagrams only.**
- **Read each question carefully and make sure that you know what you have to do before starting your answer.**
- **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, however additional paper may be used if necessary.**

## **INFORMATION FOR CANDIDATES**

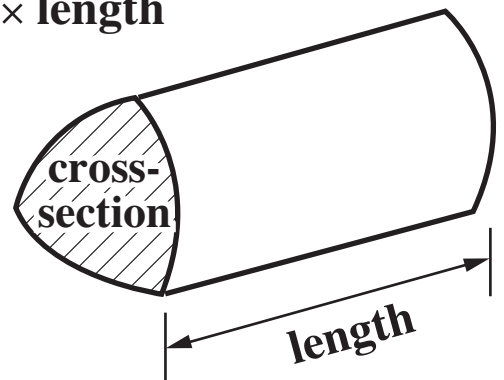
- **The number of marks is given in brackets [ ] at the end of each question or part question.**
- **Section B starts with question 6.**
- **You are expected to use a calculator in Section B of this paper.**
- **The total number of marks for this Section is 25.**

## Formulae Sheet

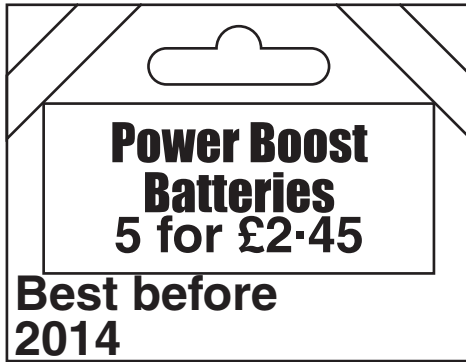
**Area of trapezium =  $\frac{1}{2} (a + b)h$**



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



6



- (a) How much does each battery cost?  
Give your answer in pence.  
[2 marks]

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

- (b) Write down ONE even number that is printed on the pack.  
[1 mark]

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

**(c) Mrs Bentham needs 28 of these batteries for a class project.**

**How many of these packs does she need?  
[1 mark]**

**(c) \_\_\_\_\_**

**7 100 g of cereal contains the following:**

<b>Protein</b>	<b>15 g</b>
<b>Carbohydrate</b>	<b>75 g</b>
<b>Fat</b>	<b>2 g</b>
<b>Fibre</b>	<b>3 g</b>
<b>Other</b>	<b>5 g</b>

- (a) (i) Work out the total weight of Protein and Fibre in 100 g of this cereal.**  
**[1 mark]**

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

- (ii) How much of the 100 g of cereal is NOT Carbohydrate?**  
**[2 marks]**

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

**(b) The energy value of 100 g of cereal is 1586 kJ.**

**Round 1586 to the nearest 100.**

**[1 mark]**

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

**(c) Brendan has a 500 g box of cereal.**

**He has eaten  $\frac{1}{4}$  of the cereal.**

**Find  $\frac{1}{4}$  of 500 g.**

**[1 mark]**

**(c) \_\_\_\_\_**

**8 Here is some information about sea creatures.**

<b>Giant Squid</b>	
<b>Weight</b>	<b>275 kg</b>
<b>Length</b>	<b>19 m</b>

<b>Minke whale</b>	
<b>Weight</b>	<b>9000 kg</b>
<b>Length</b>	<b>9 m</b>

<b>Walrus</b>	
<b>Weight</b>	<b>1954 kg</b>
<b>Length</b>	<b>5 m</b>

<b>Killer whale</b>	
<b>Weight</b>	<b>7257 kg</b>
<b>Length</b>	<b>18 m</b>

**(a) (i) Which of these weights is in the 10 times table?  
[1 mark]**

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



- (ii) Put these sea creatures in order of weight, heaviest first.**  
**[2 marks]**

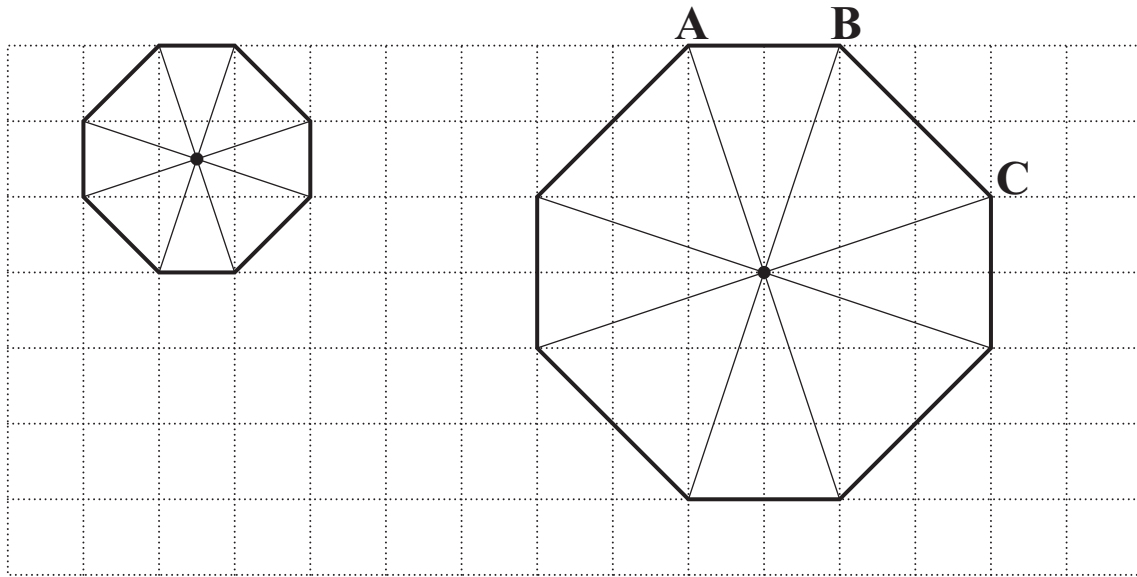
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*heaviest*

- (b) What is the difference in length between the longest of these sea creatures and the shortest?**  
**[2 marks]**

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

- 9 Akil makes a spinner for a game.  
He draws it on a grid and then decides that he needs a larger version.



- (a) How many times bigger are the sides of Akil's large spinner than his small spinner?  
[1 mark]

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

- (b) (i) Measure the length of line BC accurately.  
Give the units of your answer.  
[2 marks]

(b)(i) BC = \_\_\_\_\_

- (ii) **Is the spinner fair?**  
**Explain your answer.**  
**[2 marks]**

*Write Yes  
or No.*

\_\_\_\_\_ because \_\_\_\_\_  
\_\_\_\_\_

10 (a)

**These numbers form the start of a pattern using the rule:**

**Add 3**

**Find the next three numbers in the pattern.  
[1 mark]**

**(b) This is part of another pattern.**



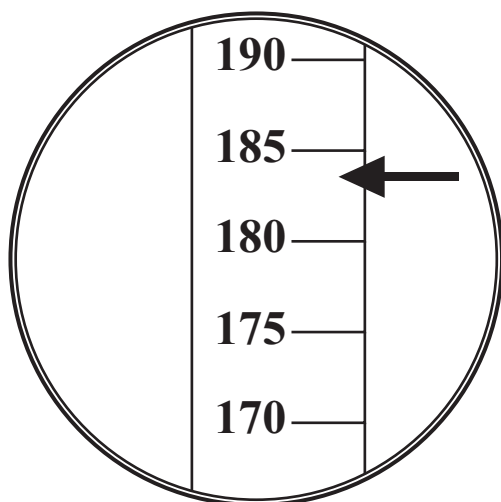
**(i) What is the rule for this pattern?**  
**[1 mark]**

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

**(ii) What number has been missed out of the pattern?**  
**[1 mark]**

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

**11 Tony needs to know his height and his weight.**

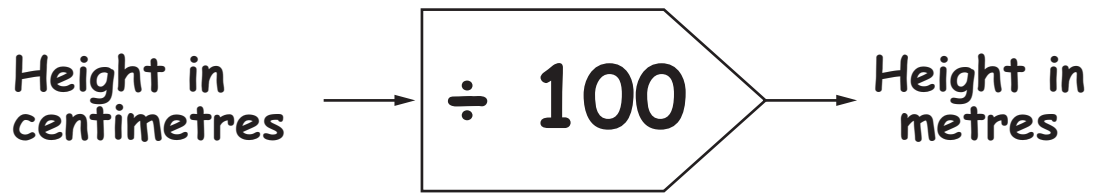


**Tony has a tape that measures centimetres.  
He marks the tape to show his height.**

**(a) What is Tony's height in centimetres?  
[1 mark]**

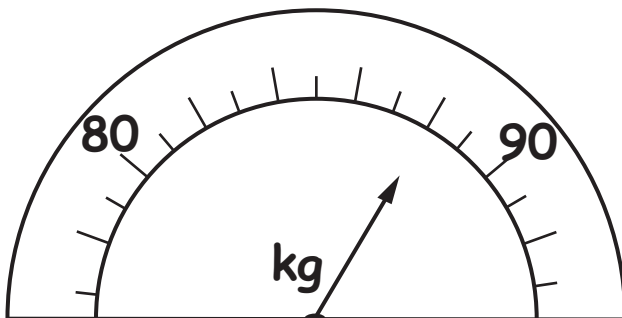
**(a) \_\_\_\_\_ cm**

- (b) Use this function machine to change Tony's height to metres.  
[1 mark]



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

Tony weighed himself.



- (c) What is Tony's weight in kilograms?  
[1 mark]

(c) \_\_\_\_\_ kg



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