

Candidate Forename						Candidate Surname					
Centre Number						Candidate Number					

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

**B277A**

**MATHEMATICS C**  
**(GRADUATED ASSESSMENT)**

**MODULE M7 – SECTION A**

**TUESDAY 1 MARCH 2011: Morning**

**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)**

**WARNING**

**No calculator can be used for  
Section A of this paper.**

**READ INSTRUCTIONS OVERLEAF**

## **INSTRUCTIONS TO CANDIDATES**

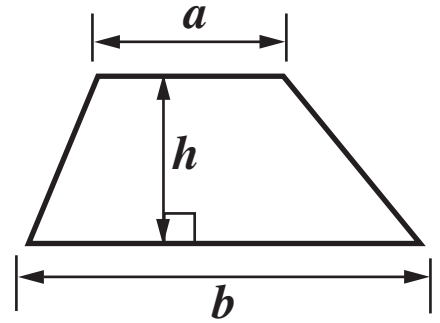
- Write your name, centre number and candidate number in the boxes on the first page. Please write clearly and in capital letters.
- Use black ink. Pencil may be used for graphs and diagrams only.
- Read each question carefully. Make sure you know what you have to do before starting your answer.
- Write 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).
- Show your working. Marks may be given for a correct method even if the answer is incorrect.
- Answer **ALL** the questions.

## **INFORMATION FOR CANDIDATES**

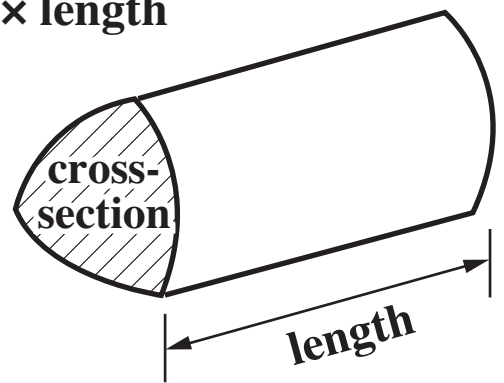
- The number of marks is given in brackets [ ] at the end of each question or part question.
- The total number of marks for this Section is **25**.

## Formulae Sheet

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



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



- (a) Complete this equation to represent the puzzle.**  
[1 mark]

**(b) Solve the equation to find the number. [3 marks]**

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

**2    The answer to  $\sqrt{3^3 + 5^3}$  lies between consecutive integers.**

**Work out the two integers. [3 marks]**

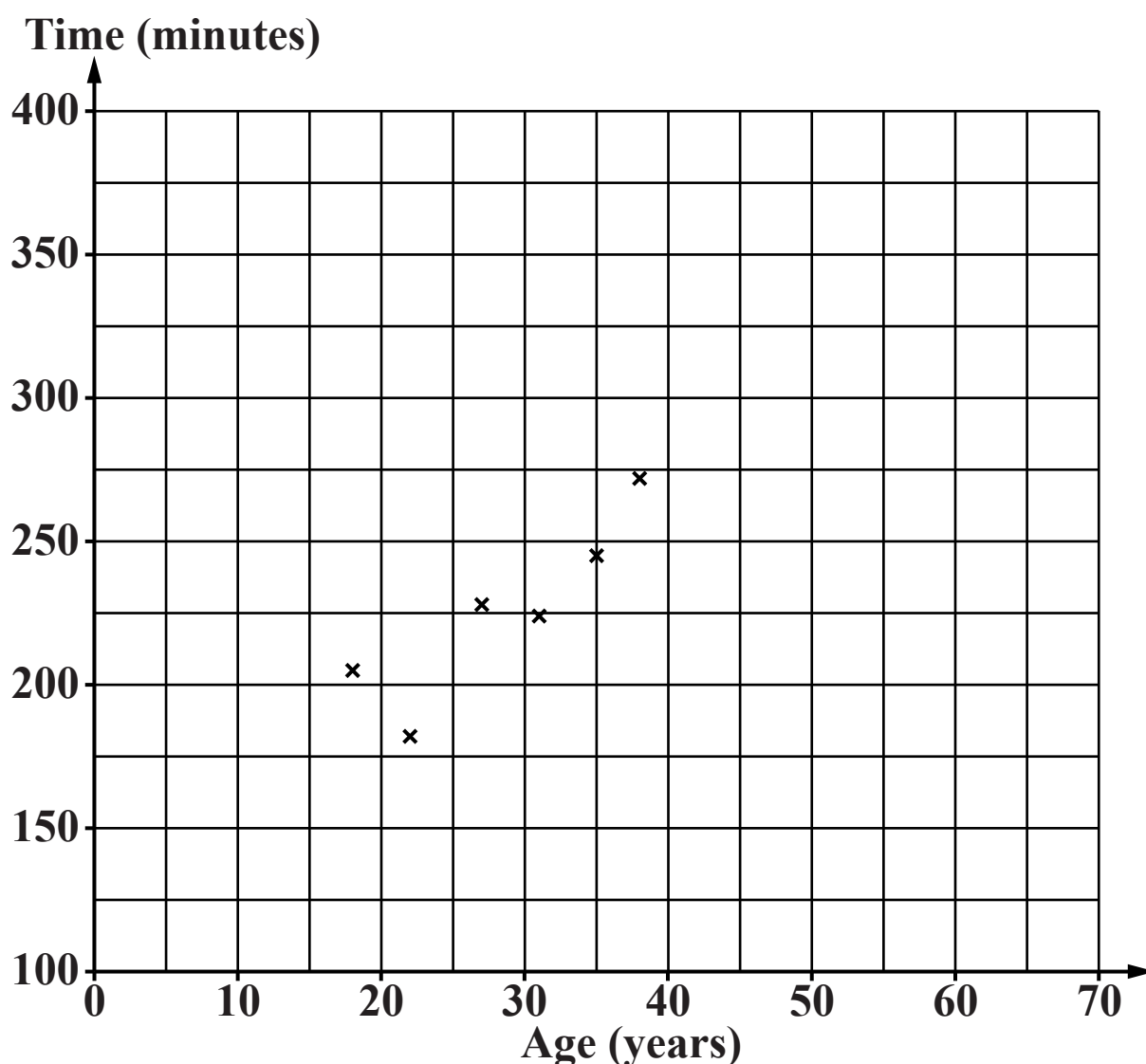
\_\_\_\_\_ **and** \_\_\_\_\_

- 3 Ten members of a family take part in a marathon.  
This table shows their ages and the number of minutes they took to complete the marathon.**

<b><u>Age (years)</u></b>	<b>18</b>	<b>22</b>	<b>27</b>	<b>31</b>	<b>35</b>	<b>38</b>	<b>45</b>	<b>49</b>	<b>63</b>	<b>65</b>
<b><u>Time (minutes)</u></b>	<b>205</b>	<b>182</b>	<b>228</b>	<b>224</b>	<b>245</b>	<b>272</b>	<b>290</b>	<b>265</b>	<b>325</b>	<b>355</b>

**The information for the first six people is plotted on the scatter diagram below.**

- (a) Complete the scatter diagram for the last four people.  
[1 mark]**



**(b) Describe the correlation. [1 mark]**

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**(c) (i) Draw a line of best fit on your diagram. [1 mark]**

**(ii) Chris missed the marathon. Chris is 52 years old.  
Use your line to estimate how long Chris would have  
taken to complete the marathon. [1 mark]**

**(c)(ii) \_\_\_\_\_ minutes**

**4 The  $n$ th term of a sequence is  $5n - 2$ .**

**(a) Work out the first three terms of this sequence.  
[2 marks]**

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

**(b) Which term of the sequence is 58? [1 mark]**

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

**(c) Explain why 99 is not a term in this sequence. [1 mark]**

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**5 Mia has completed these three calculations.**

**A**  $31.4 \times 0.44 = 45.216$

**B**  $21.4 \div 0.68 = 14.552$

**C**  $23.43 \div 1.42 = 16.5$

**Only one answer is correct.**

**(a) Which answer is correct? [1 mark]**

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

**(b) Explain why the other two answers are wrong.  
Do NOT do the full calculations.**

\_\_\_\_\_ is wrong because \_\_\_\_\_

\_\_\_\_\_ [1 mark]

\_\_\_\_\_ is wrong because \_\_\_\_\_

\_\_\_\_\_ [1 mark]

- 6 (a) Write these fractions in order of size, smallest first.  
[1 mark]

$$\frac{3}{5}$$

$$\frac{4}{15}$$

$$\frac{9}{20}$$

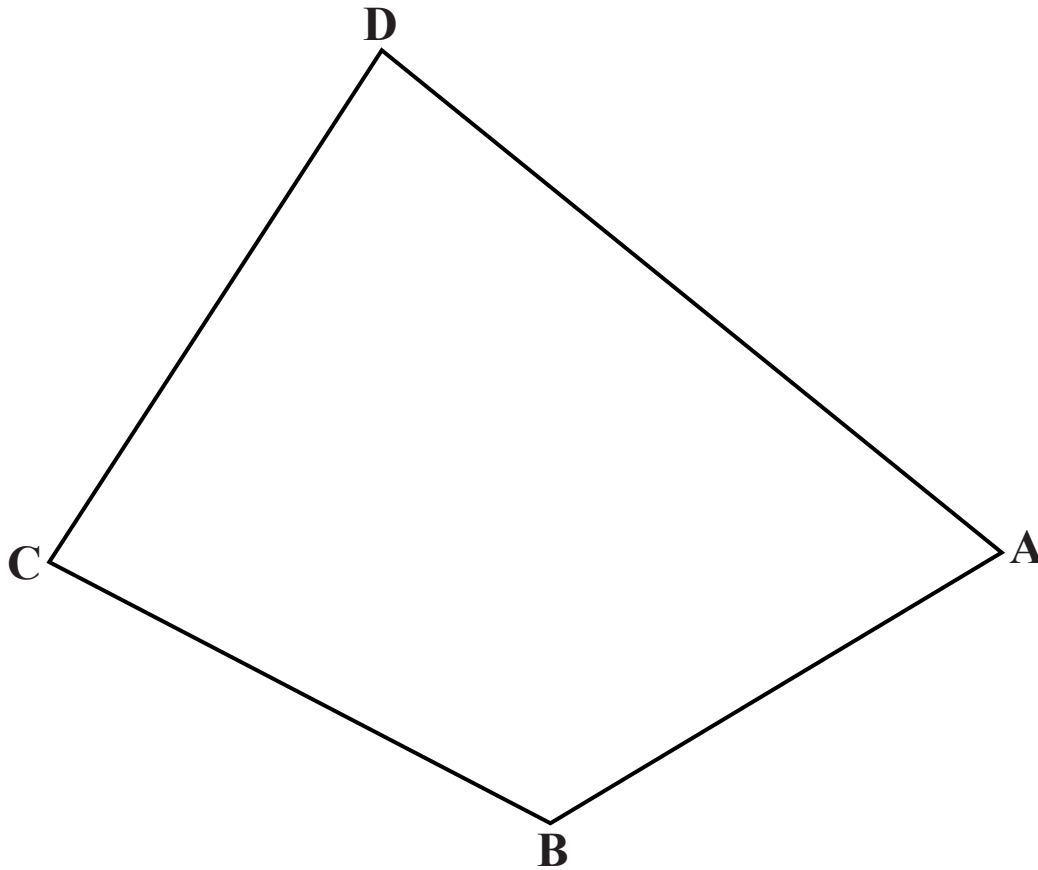
                                                                    
*smallest*

- (b) Express  $\frac{1}{6}$  as a recurring decimal. [2 marks]

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

- 7 Use ruler, compasses and pencil only to answer this question.  
Leave in all your construction lines.**

**ABCD is a quadrilateral.**



- (a) Construct the bisector of angle B. [2 marks]**
- (b) Identify clearly the locus of points closer to AB than to BC AND more than 5 cm from A. [2 marks]**

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