

GENERAL CERTIFICATE OF SECONDARY EDUCATION
MATHEMATICS C (GRADUATED ASSESSMENT)
MODULE M6 (SECTION B)

B276B

Candidates answer on the Question Paper

OCR Supplied Materials:
None

- Other Materials Required:**
- Geometrical instruments
 - Tracing paper (optional)
 - Scientific or graphical calculator

Monday 21 June 2010
Afternoon

Duration: 30 minutes



Candidate Forename		Candidate Surname	
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Centre Number						Candidate Number				
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INSTRUCTIONS TO CANDIDATES

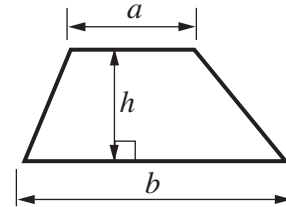
- Write your name clearly in capital letters, your Centre Number and Candidate Number in the boxes above.
- Use black ink. Pencil may be used for graphs and diagrams only.
- Read each question carefully and make sure that you know what you have to do before starting your answer.
- Show your working. Marks may be given for a correct method even if the answer is incorrect.
- Answer **all** the questions.
- Do **not** write in the bar codes.
- 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

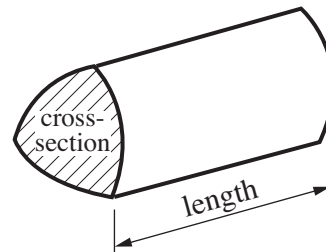
- The number of marks is given in brackets [] at the end of each question or part question.
- Section B starts with question 8.
- You are expected to use a calculator in Section B of this paper.
- Use the π button on your calculator or take π to be 3.142 unless the question says otherwise.
- The total number of marks for this Section is **25**.
- This document consists of **8** pages. Any blank pages are indicated.

Formulae Sheet

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



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



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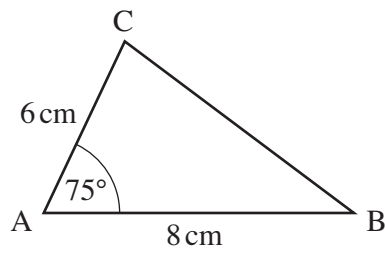
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8 Here is a sketch of a triangle.



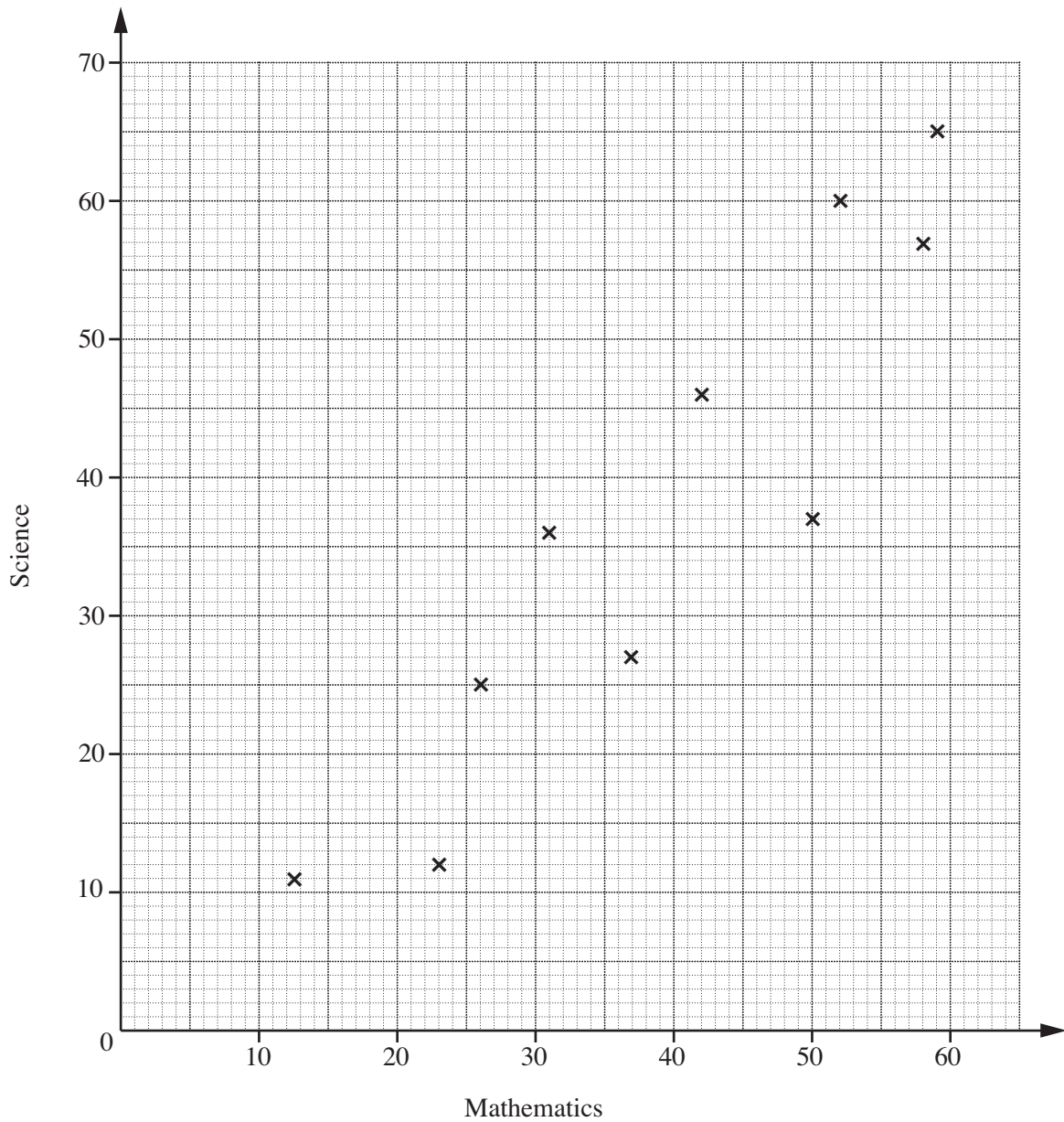
Not to scale

Make an accurate full-size drawing of triangle ABC.
The side AB has been drawn for you.



[2]

9 The scatter diagram shows the marks in a Mathematics test and a Science test for some pupils.



(a) Describe the relationship between the Mathematics and Science marks.

..... [1]

(b) Draw a line of best fit on the diagram.

[1]

(c) Ben scored 40 in Mathematics but was absent for Science.

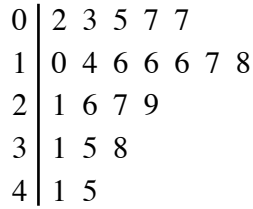
Use your line of best fit to estimate a Science mark for Ben.

(c) [1]

10 Miss Bates gives her students Smiley stickers when they complete a good piece of work.



(a) The stem and leaf diagram shows the number of stickers each of the 21 students in class 7A has received.



Key : 2 | 7 represents 27 stickers

(i) Find the median.

(a)(i) [1]

(ii) Find the range.

(ii) [1]

(b) Here are the mean and range of the number of stickers for two other classes.

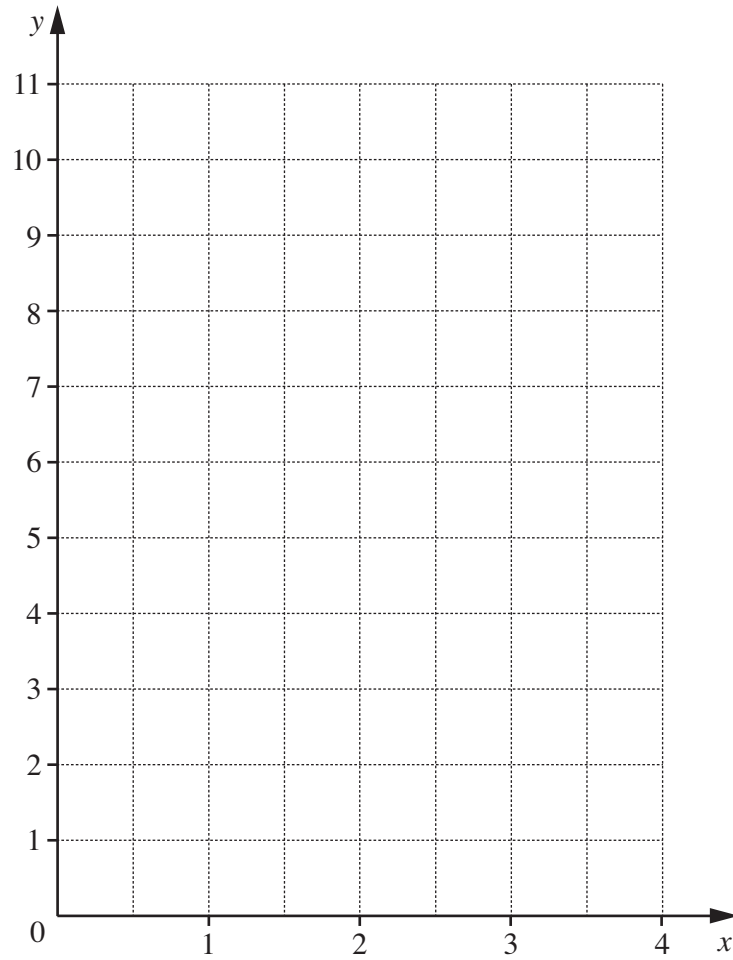
	Mean	Range
7B	29.5	25
7C	26	31

Which class, 7B or 7C, had more stickers per student?
Give a reason for your answer.

Class because

..... [1]

11 (a) Draw the graph of $y = 2x + 2$ on the grid below.



[3]

(b) Use your graph to find the value of x when $y = 5$.

(b) [1]

- 12 (a) Calculate.

$$\frac{6 \cdot 3^2}{15 \cdot 8 + 9 \cdot 7}$$

Write your answer correct to 2 decimal places.

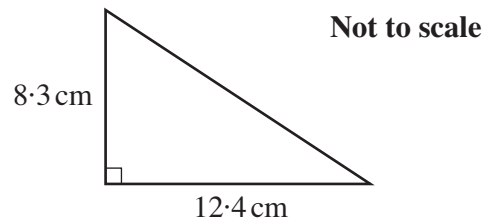
(a) [2]

- (b) A calculator shows an answer of 5.4 hours.

Write this answer in hours and minutes.

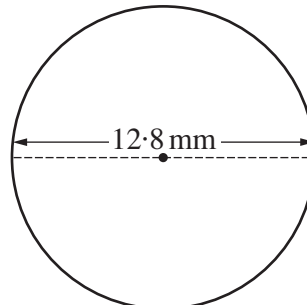
(b) hours minutes [1]

- 13 (a) Calculate the area of this right-angled triangle.
Give the units of your answer.



(a) [3]

- (b) Calculate the circumference of this circle.



(b) mm [2]

TURN OVER FOR QUESTIONS 14 AND 15

14 (a) Multiply out.

$$4(x + 2)$$

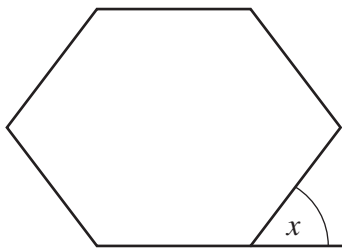
(a) [1]

(b) Factorise.

$$6x + 15$$

(b) [1]

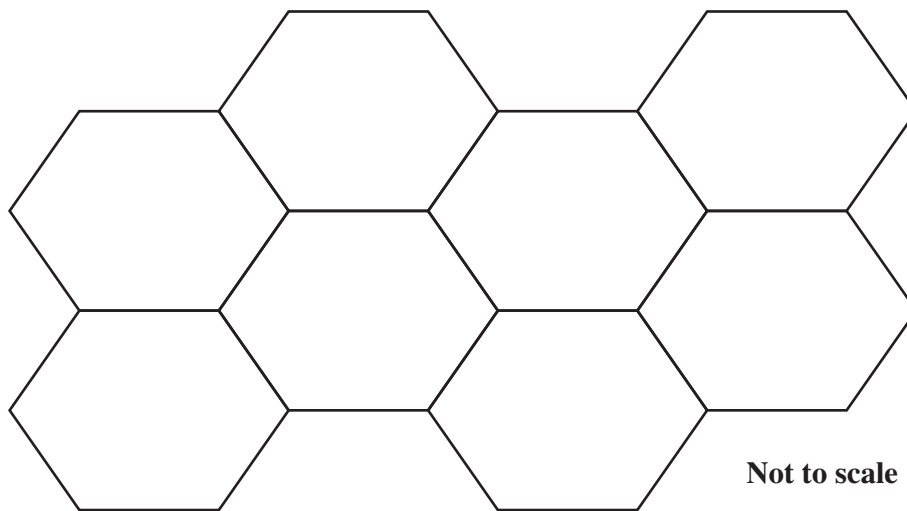
15 (a) This is a sketch of a regular hexagon.
Calculate the exterior angle x .



Not to scale

(a)^o [2]

(b) This sketch shows a tessellation of regular hexagons.



Not to scale

Explain why regular hexagons tessellate.

.....
 [1]