

**GENERAL CERTIFICATE OF SECONDARY EDUCATION**  
**MATHEMATICS C (GRADUATED ASSESSMENT)**  
MODULE M5 – SECTION B

**B275B**

Candidates answer on the question paper

**OCR Supplied Materials:**

None

**Other Materials Required:**

- Geometrical instruments
- Tracing paper (optional)
- Pie chart scale (optional)
- Electronic calculator

**Monday 9 March 2009**  
**Morning**

**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, however additional paper may be used if necessary.

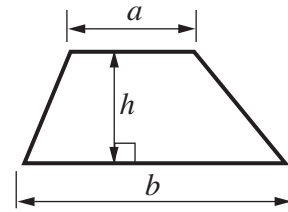
**INFORMATION FOR CANDIDATES**

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

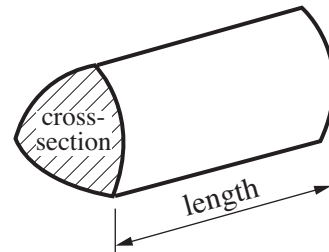
<b>FOR EXAMINER'S USE</b>	
<b>SECTION B</b>	

## Formulae Sheet

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



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



**PLEASE DO NOT WRITE ON THIS PAGE**

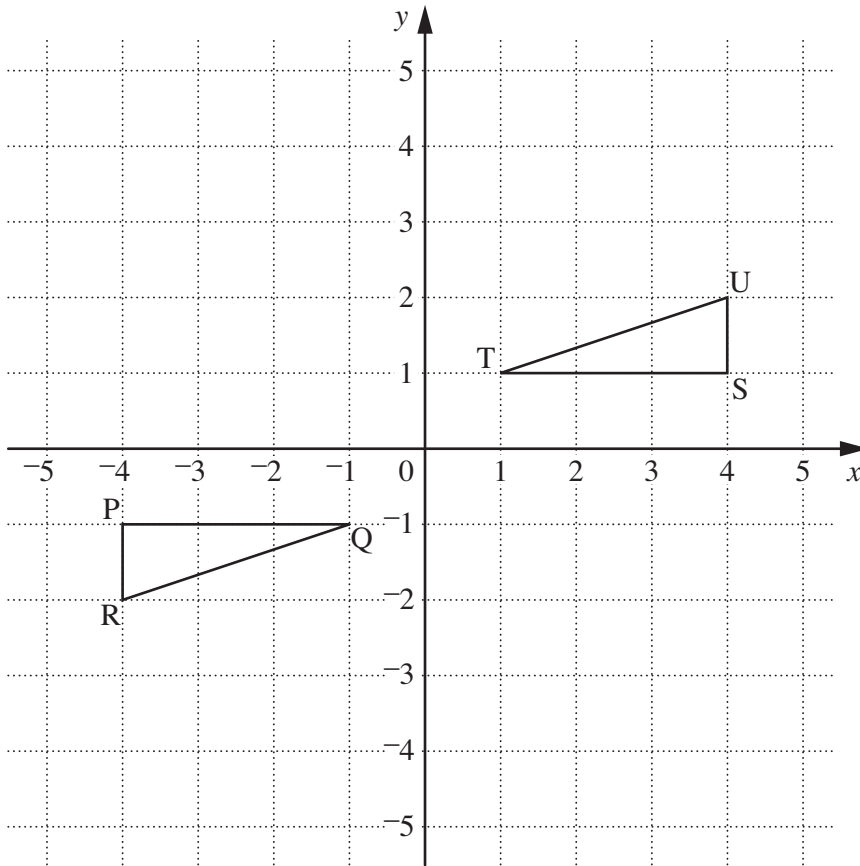
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(a) Write down the coordinates of the point P.

(a) (..... , .....) [1]

(b) Plot the point (-3, 1).  
Label your point X.

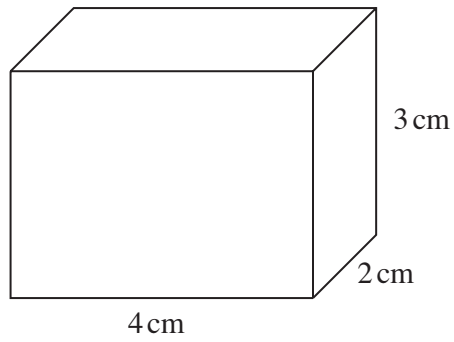
[1]

(c) Triangle PQR has been rotated clockwise about (0, 0) to triangle STU.

What is the angle of this rotation?

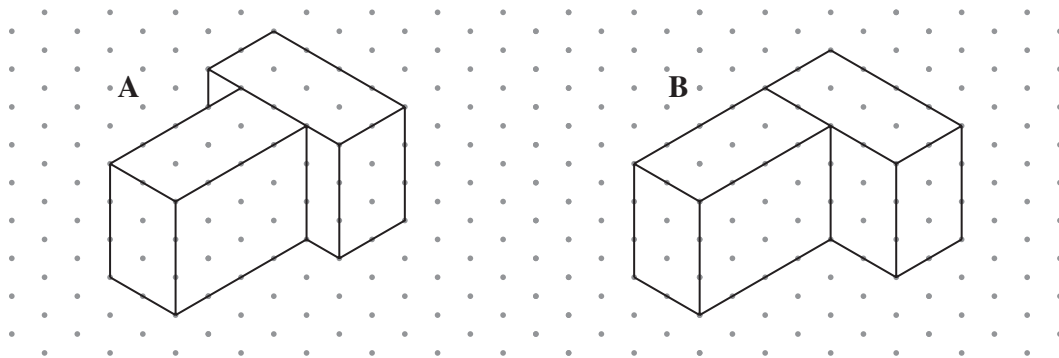
(c) ..... ° [1]

9 (a) Find the volume of this cuboid.



(a) ..... cm<sup>3</sup> [2]

(b) Two of these cuboids have been joined to make each of these solids.



Which of these solids have reflection symmetry?

*Ring the correct answer.*

- Only A
- Only B
- Both A and B
- Neither

[1]

- 10 (a) This is Jayne's homework.  
The answer is wrong.

Solve this equation.

$$6y = 3$$

$$y = 2 \quad \mathbf{X}$$

Explain why the answer **cannot** be 2.

..... [1]

- (b) This is Simon's homework.  
He has also made a mistake.

Solve this equation.

$$4c - 11 = 17$$

$$4c = 6$$

$$c = 1.5 \quad \mathbf{X}$$

Put a ring around the first number that is wrong.

[1]

- (c) Solve the equation  $2h + 7 = 12$ .

$$2h + 7 = 12$$

(c) ..... [2]

- (d) Which of these equations is equivalent to  $2x + 3 = 10$ ?  
Put a tick (✓) next to the correct equation.

$$x + 5 = 10$$

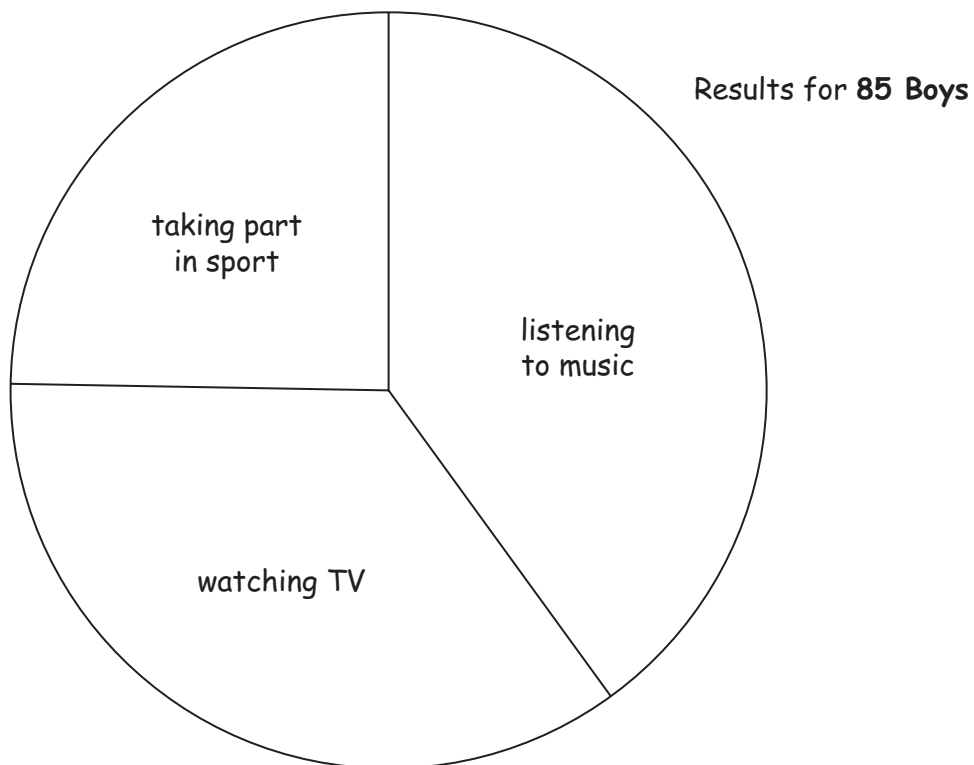
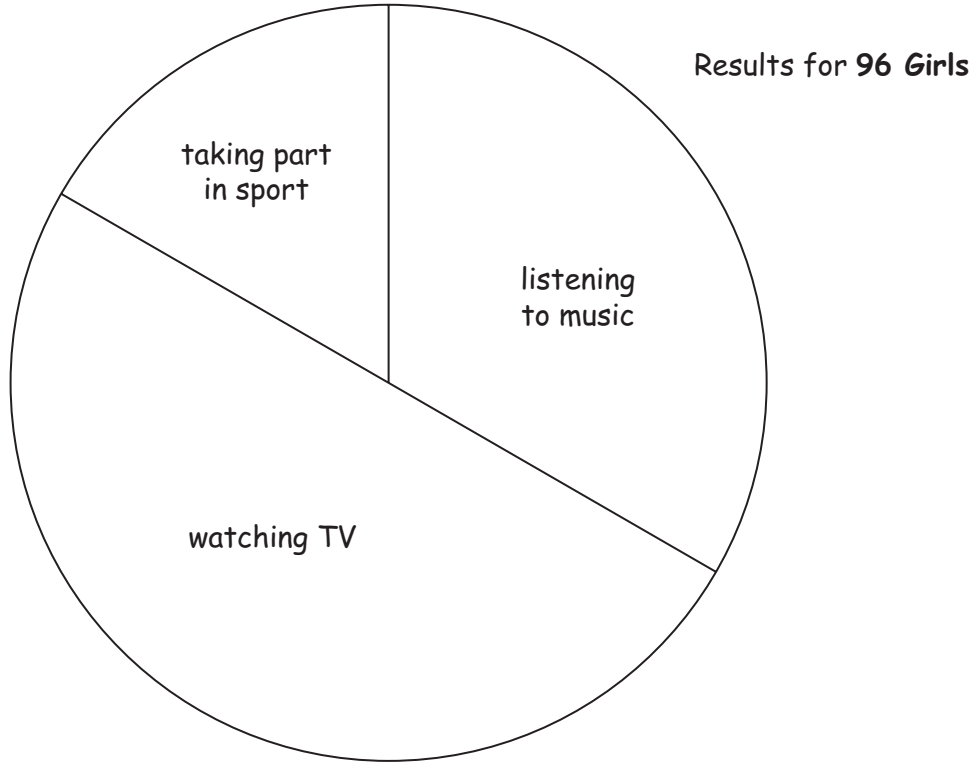
$$6x = 10$$

$$x + 1 + x + 2 = 10$$

$$5x = 10$$

[1]

- 11 (a) Salma asked all the pupils in her year group which of these they like best:  
listening to music,  
watching TV or  
taking part in sport.  
These pie charts show her results.



(i) How many of the 96 girls chose 'listening to music'?

(a)(i) ..... [2]

(ii) How many of the 85 boys chose 'listening to music'?

(ii) ..... [2]

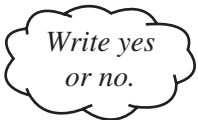
(b) Salma asked her teachers how many hours they spend listening to CDs each week. Here are her results.

4      16      3      2      3      35      19      8      3      32

(i) Work out the median number of hours.

(b)(i) ..... [2]

(ii) Does the median give a fair idea of the number of hours? Explain your answer.



..... because .....  
..... [1]

(c) Salma also asked her 10 teachers if they took part in sport every week. 30% said Yes, the rest said No.

How many of her teachers said No?

(c) ..... [2]

**TURN OVER FOR QUESTION 12**

- 12 This is a map of part of Yorkshire.  
The position of each town is shown by ■.



Scale: 1 cm to 2 km

- (a) What is the bearing of Flamborough Head from Bridlington?

(a) .....° [1]

- (b) George is cycling from Filey to Bridlington along the A165.

- (i) Estimate the real distance from Filey to Bridlington.

(b)(i) ..... km [2]

- (ii) This formula gives the energy used on a cycle journey.

$$E = 33 \times D \div 2$$

where  $E$  = energy in joules  
 $D$  = distance in kilometres

Work out how much energy George uses for this journey.

(ii) ..... joules [2]