

**GENERAL CERTIFICATE OF SECONDARY EDUCATION**  
**MATHEMATICS C (GRADUATED ASSESSMENT)**  
Terminal Paper – Section A (Foundation Tier)

**B281A**

Candidates answer on the Question Paper

**OCR Supplied Materials:**

None

**Other Materials Required:**

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

**Monday 7 June 2010**  
**Afternoon**

**Duration: 1 hour**



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.
- The total number of marks for this Section is **50**.
- This document consists of **16** pages. Any blank pages are indicated.

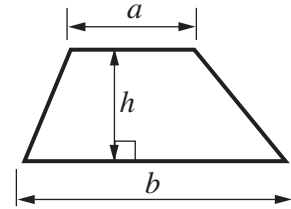
**WARNING**



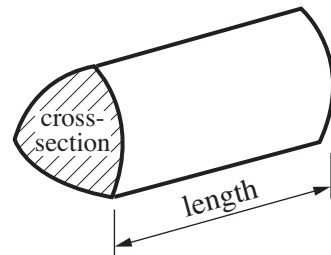
No calculator can be used for Section A of this paper

## 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**

1 (a) At a Byton Town football match, there were 25 062 spectators.

(i) Write 25 062 in words.

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

(ii) Write 25 062 to the nearest hundred.

(a)(ii)..... [1]

(b) During the season, Byton Town scored 80 goals.  
22 goals were scored against them.

Work out  $80 - 22$ .

(b) ..... [1]

9	11	12	15	21	30
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(a) Use numbers from this list to complete the following.

(i) ..... is a multiple of 7. [1]

(ii) ..... is a factor of ..... [1]

(iii) ..... is an even number. [1]

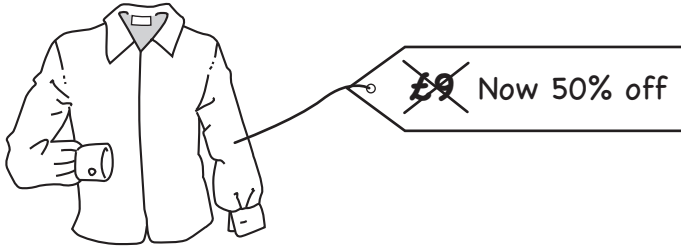
(iv) ..... is a prime number. [1]

(b) Explain how you can tell that 9 is a square number.

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

3 Here are some offers in the sales.

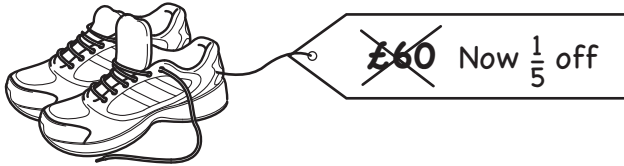
(a)



Work out 50% of £9.

(a) £..... [1]

(b)



Work out  $\frac{1}{5}$  of £60.

(b) £ ..... [1]

(c)

30% off in this sale

Write 30% as a decimal.

(c) ..... [1]

(d)

Special offer -  
prices reduced by 12%

Write 12% as a fraction in its simplest form.

(d) ..... [2]

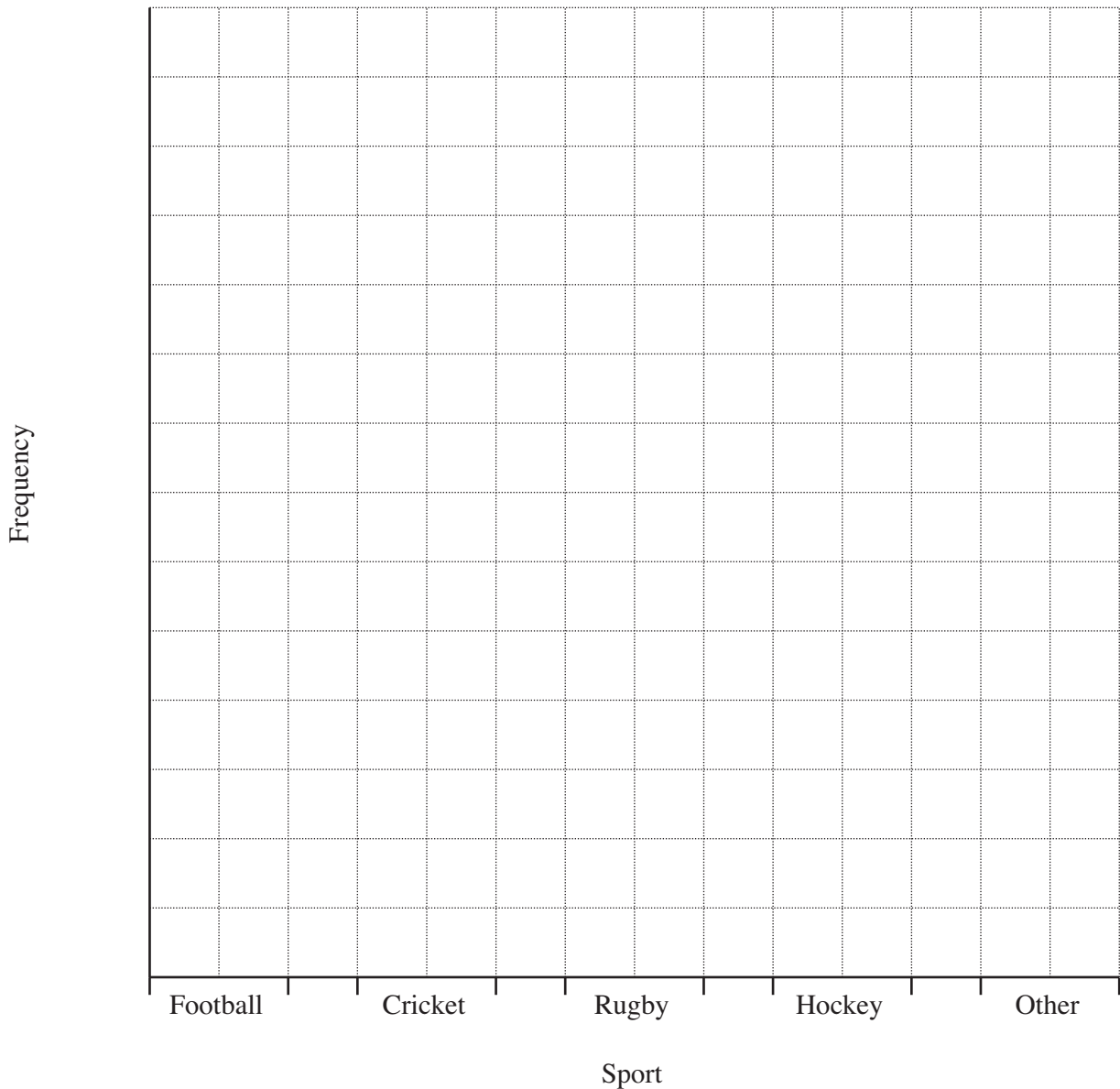
- 4 (a) Ahmed asked some people what was their favourite sport. This table summarises their responses.

Sport	Frequency
Football	9
Cricket	12
Rugby	7
Hockey	3
Other	10

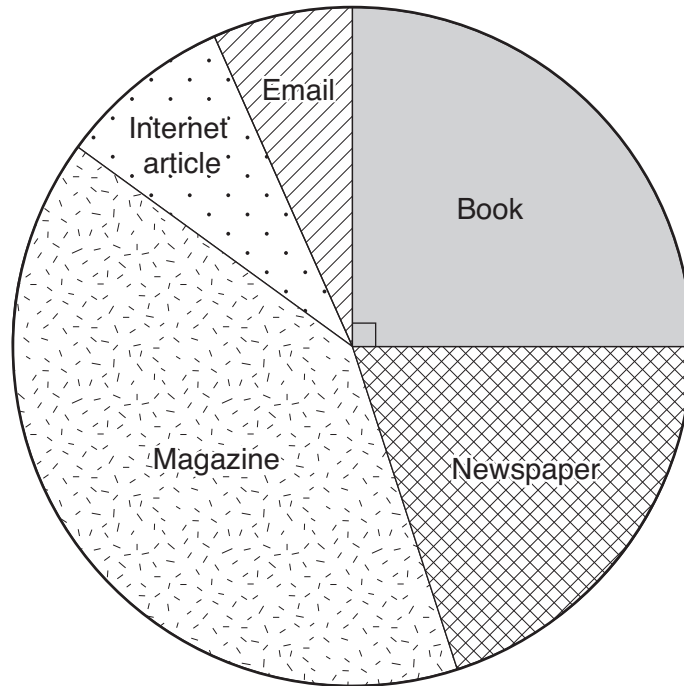
- (i) Which sport was the mode?

(a)(i) ..... [1]

- (ii) Draw a bar chart to represent the responses.



- (b) Jane asked some people what was their favourite sort of reading. This pie chart summarises the results.



- (i) Use the pie chart to complete this sentence.

Reading a ..... is twice as popular as reading a Newspaper. [1]

- (ii) 60 people answered altogether.

How many chose Book?

(b)(ii) ..... [2]

5 A university college has a new building with bedrooms for students.  
The building has 4 floors.  
There are 35 bedrooms on each floor. Each bedroom is for one student.

(a) How many bedrooms are there in the building altogether?

(a) ..... [2]

(b) In each bedroom there are three bookshelves.  
Two are 1.4 m long and one is 2.3 m long.

Calculate the total length of the bookshelves in one bedroom.

(b) ..... m [2]

(c) On each floor, 35 students share 5 kitchens.  
The same number of students use each kitchen.

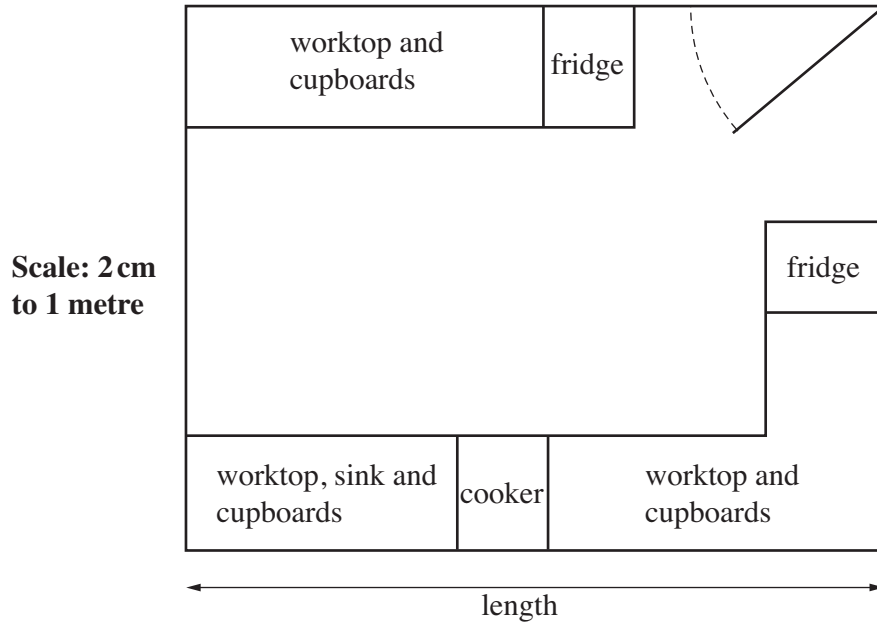
How many students use one kitchen?

(c) ..... [2]



(d) Here is a plan view of one of the kitchens.

The scale is 2 cm to 1 metre.



What is the length of the real kitchen?

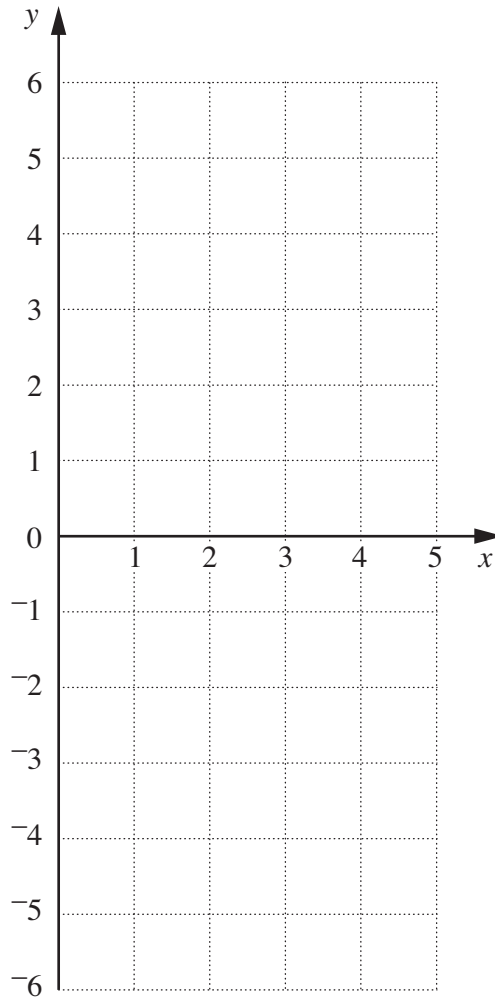
(d) ..... m [2]

6 (a) Complete this table for  $y = 2x - 5$ .

$x$	0	2	4
$y$	-5		

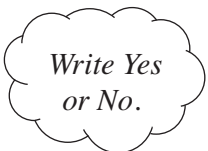
[1]

(b) Draw the graph of  $y = 2x - 5$ .



[2]

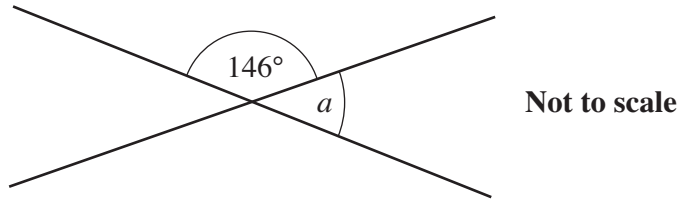
(c) Is the point  $(12, 9)$  on the line  $y = 2x - 5$  if the line is drawn far enough? Explain how you get your answer.



..... because .....

..... [1]

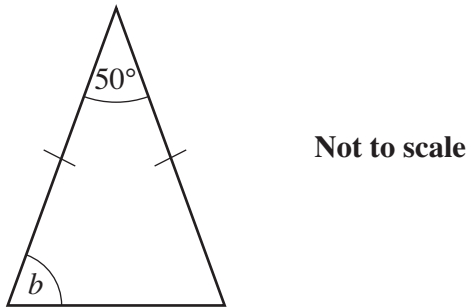
7 (a)



Find the size of angle  $a$ .  
Give a reason for your answer.

$a = \dots\dots\dots^\circ$  because  $\dots\dots\dots$   
 $\dots\dots\dots$  [2]

(b)



Find the size of angle  $b$ .  
Give reasons for your answer.

$b = \dots\dots\dots^\circ$  because  $\dots\dots\dots$   
 $\dots\dots\dots$   
 $\dots\dots\dots$  [3]

8 Work out.

(a)  $2^3 \times 5^2$

(a) ..... [2]

(b)  $\frac{4}{5} - \frac{3}{7}$

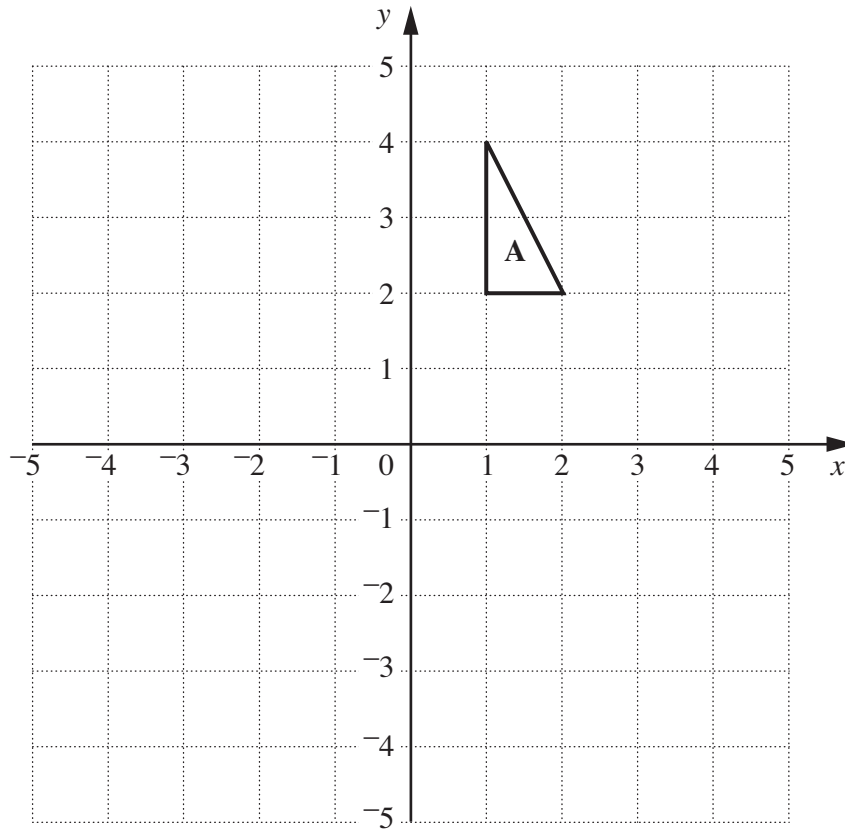
(b) ..... [2]

9 Solve.

$$2x + 1 = 2(3x - 4)$$

..... [3]

10



- (a) Reflect triangle **A** in the line  $y = 0$ .  
Label the image **B**.

[1]

- (b) Rotate triangle **A**  $90^\circ$  anticlockwise with centre  $(0, 0)$ .  
Label the image **C**.

[2]

- 11 Pete has ordered some souvenir mugs to sell.  
 They are delivered in boxes.  
 When he opens the first box he finds a faulty mug, so he checks all the mugs in this box.

Condition	Number of mugs
Perfect	30
Faulty	18

- (a) A mug is chosen at random from the first box.

Show that the probability that the mug is faulty is  $\frac{3}{8}$ .

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

- (b) Altogether Pete has ordered 400 mugs.

About how many would you expect to be faulty?  
 Show your working clearly.

(b) ..... [2]

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