

**GENERAL CERTIFICATE OF SECONDARY EDUCATION  
MATHEMATICS C (GRADUATED ASSESSMENT)**

**B281A**

Terminal Paper – Section A  
(Foundation Tier)

Candidates answer on the question paper

**OCR Supplied Materials:**

None

**Other Materials Required:**

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

**Monday 1 June 2009  
Morning**

**Duration: 1 hour**



Candidate Forename		Candidate Surname	
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Centre Number						Candidate Number				
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**MODIFIED LANGUAGE**


**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. Then start 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. Ask for more paper if you need it.

**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 **12** pages. Any blank pages are indicated.

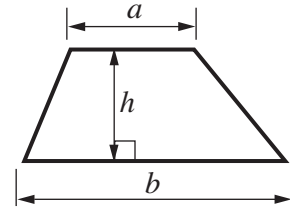
**WARNING**



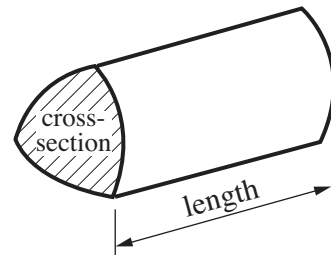
**No calculator can be used for Section A of this paper**

## 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 Work out.

(a)  $300 - 139$

(a) ..... [2]

(b)  $65 \div 5$

(b) ..... [1]

2 At 9 am each day Andy records the temperature in his garden.  
The table shows the temperatures for 5 days in January.

Day	Temperature ( $^{\circ}\text{C}$ )
Monday	2
Tuesday	$-4$
Wednesday	$-2$
Thursday	5
Friday	1

(a) On which day was the temperature lowest?

(a) ..... [1]

(b) How many degrees warmer was Thursday than Wednesday?

(b) ..... [1]

(c) On Saturday the temperature was 4 degrees lower than on Friday.

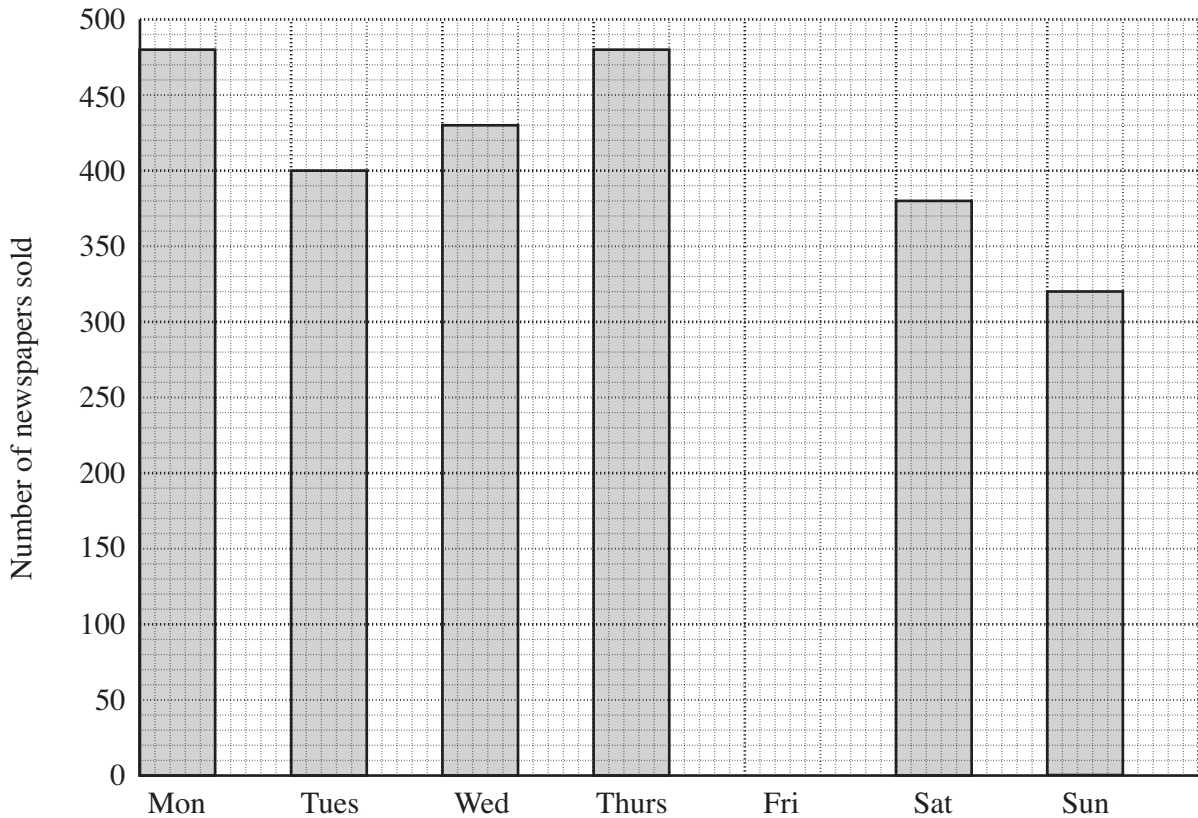
What was the temperature on Saturday?

(c) .....  $^{\circ}\text{C}$  [1]

3 Work out the value of  $5a + 3b$  when  $a = 4$  and  $b = 2$ .

..... [2]

4 (a) This bar chart shows the number of newspapers a shop sells on some days during one week.



(i) How many newspapers did the shop sell on Monday?

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

(ii) On Friday the shop sold 440 newspapers.  
Show this on the bar chart.

[1]

(iii) How many **more** newspapers did the shop sell on Saturday than on Sunday?

(iii) ..... [1]

(b) This table shows the average daily sales of newspapers in the UK in July 2007.

Newspaper	Average daily sales
Daily Express	735 307
Daily Mirror	1 496 572
Daily Star	811 988
Financial Times	130 007
The Daily Mail	2 205 172
The Daily Telegraph	833 430
The Guardian	311 768
The Independent	189 797
The Sun	2 916 821
The Times	595 172

(i) Which newspaper had the lowest average daily sales?

(b)(i) ..... [1]

(ii) Write 2 916 821 correct to the nearest million.

(ii) ..... [1]

(iii) Write 833 430 correct to the nearest thousand.

(iii) ..... [1]

(c) These were the weekday prices, in pence, of the newspapers.

40    40    35    130    45    70    70    70    35    65

(i) Find the mode and the median of these prices.

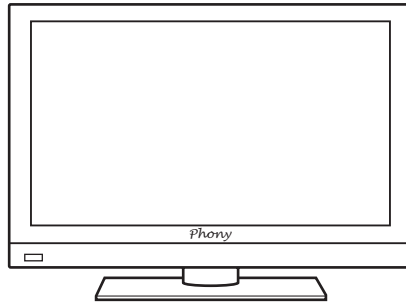
(c)(i) mode ..... p

median ..... p [3]

(ii) The median is a better average to use than the mode for these newspaper prices. Give a reason why.

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

5 The cash price of this TV is £600.



The shop offers a 'credit deal'.

Pay 25% deposit and then 12 payments of £49

(a) Work out 25% of £600.

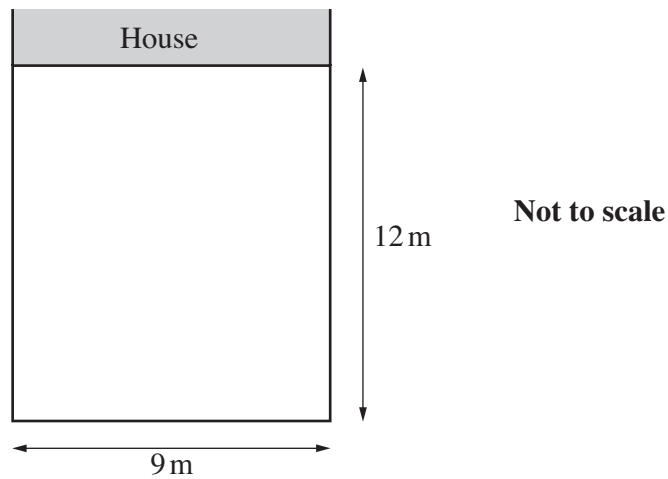
(a) £ ..... [2]

(b) John chooses the credit deal.

How much more does John pay than the cash price?

(b) £ ..... [4]

- 6 This is a sketch of Mary's rectangular garden.



- (a) Mary is buying new fence panels for the two long sides and one short side of the garden. Each fence panel is 1.5 m wide.

Work out how many panels Mary needs to buy.

(a) ..... [2]

- (b) Mary uses  $\frac{1}{3}$  of the garden for growing vegetables.

Work out the area for growing vegetables.

(b) .....m<sup>2</sup> [3]

7 Solve these equations.

(a)  $\frac{x}{4} = 5$

(a) ..... [1]

(b)  $2x - 5 = 21$

(b) ..... [2]

8 Here are three consecutive integers.

$$n \qquad n + 1 \qquad n + 2$$

(a) Find an expression for the sum of these three integers.  
Write your answer as simply as possible.

(a) ..... [1]

(b) Explain how you can tell from the answer to part (a) that the sum of three consecutive integers is **always** divisible by 3.

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



9 For a drink, Meera mixes lime cordial and lemonade in the ratio 1 : 4.

(a) How much lemonade does she need to use with 100 ml of lime cordial?

(a) ..... ml [1]

(b) Meera wants to make 800 ml of this drink.

Calculate how much lime cordial she needs.

(b) ..... ml [2]

(c) Meera drinks 480 ml of the 800 ml.

Write the ratio 480 : 800 as simply as possible.

(c) ..... : ..... [2]

10 (a) Insert brackets in each of the following calculations so that they are correct.

$$2 + 5 \times -4 = -28$$

$$2 \times 5 + -4^2 = 2$$

$$2 \times 5 + -4^2 = 36$$

[3]

(b) Expand.

$$5(3x - 4)$$

(b) ..... [1]

(c) Factorise fully.

$$6x + 3x^2$$

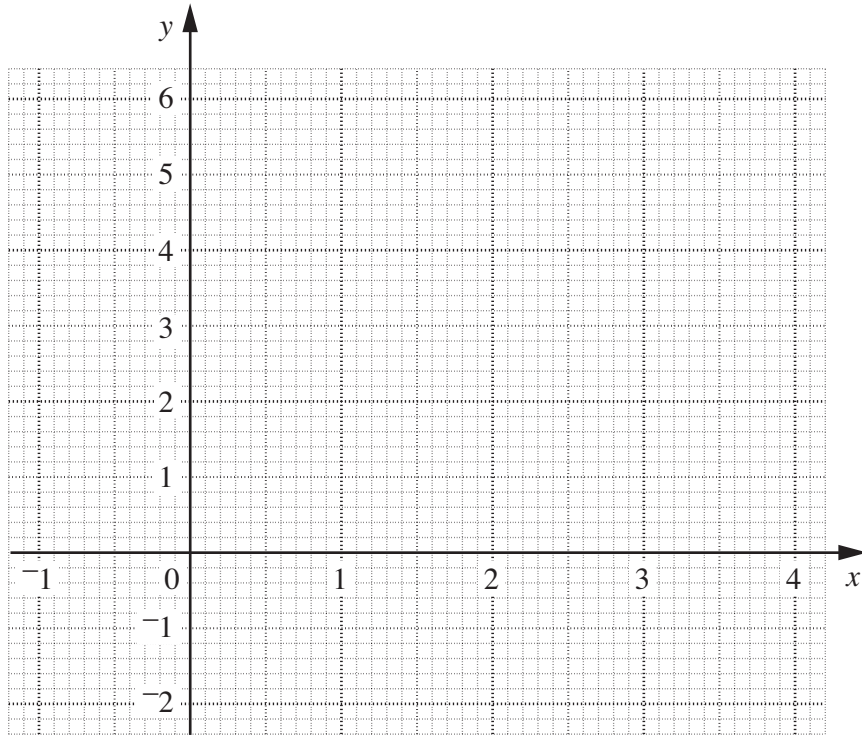
(c) ..... [2]

11 (a) Complete the table for  $y = 3 + 3x - x^2$ .

$x$	-1	0	1	2	3	4
$y$	-1	3			3	-1

[1]

(b) Draw the graph of  $y = 3 + 3x - x^2$ .



[2]

(c) Use your graph to find the values of  $x$  for which  $3 + 3x - x^2 = 0$ .

(c) ..... [2]

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