

GENERAL CERTIFICATE OF SECONDARY EDUCATION

MATHEMATICS C

Foundation Tier

TERMINAL PAPER – SECTION B

SPECIMEN

Candidates answer on the question paper.

Additional Materials:

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

F B281/B

Time: 1 hour



Candidate
Name

Centre
Number

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Candidate
Number

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INSTRUCTIONS TO CANDIDATES

- Write your name, centre number and candidate number in the boxes above.
- Answer **all** the questions.
- Use blue or black ink. Pencil may be used for graphs and diagrams only.
- Read each question carefully and make sure you know what you have to do before starting your answer.
- In many questions marks will be given for a correct method even if the answer is incorrect.
- Do **not** write in the bar code.
- Do **not** write outside the box bordering each page.
- WRITE YOUR ANSWER TO EACH QUESTION IN THE SPACE PROVIDED. ANSWERS WRITTEN ELSEWHERE WILL NOT BE MARKED.

INFORMATION FOR CANDIDATES

- You are expected to use a calculator in Section B of this paper.
- 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.
- Section B starts with Question 11.
- Use the π button on your calculator or take π to be 3.142 unless the question says otherwise.

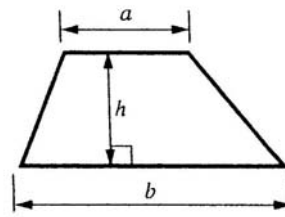
For Examiner's Use

Section B

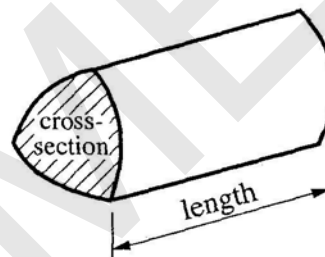
This document consists of **11** printed pages and **1** blank page.

2
FORMULAE SHEET

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



Volume of prism = (area of cross-section) x length



11 (a) Here is a number pattern.

51	47	43	39	35	
----	----	----	----	----	--

(i) Fill in the next number in this pattern. [1]

(ii) Explain how you worked it out.

[1]

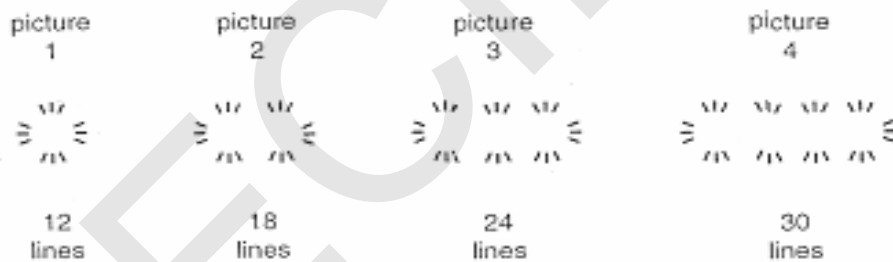
(b) Here is a different number pattern.

51	41	43	33	35	25	27		
----	----	----	----	----	----	----	--	--

Explain how to work out the next two numbers in this pattern.

[2]

(c) Here is another number pattern.



This formula is used to find the number of lines for a picture.

Multiply the picture number by 6 then add 6




Use the formula to find the number of lines for picture 10.


(c) _____ [2]

6

[Turn over

12 Abu kept a record of the weather each day for 4 weeks. This pictogram shows some of his results.

Cloudy	
Foggy	
Rainy	
Sunny	

Key	
	Stands for 2 days

(a) Six days were Cloudy.
Show this on the pictogram.

[1]

(b) Which type of weather was most common?

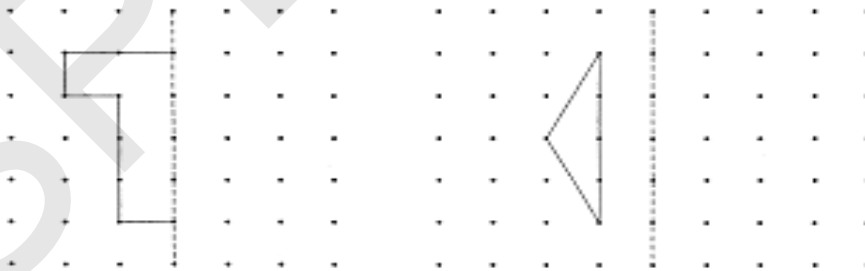
(b) _____ [1]

(c) How many days were Foggy?

(c) _____ [1]

3	

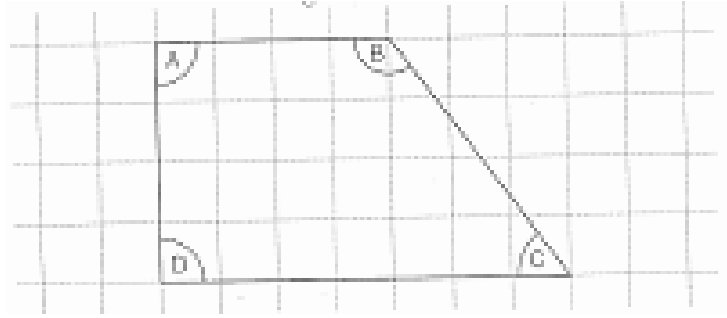
13 Complete each shape so that the dashed line is a line of reflection symmetry.



[4]

4	

14



(a) Complete.

Angle _____ is acute.

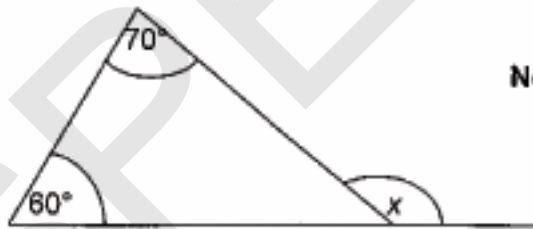
Angle _____ is a right angle.

Angle _____ is obtuse.

[2]

(b) By measuring, find the perimeter of this shape.

(b) _____ cm [2]

(c) Find angle x . Give reasons for your answer. $x =$ _____ $^{\circ}$ because _____

[2]

6

[Turn over

15

Tanya breaks the records!

Tanya Streeter held her breath for 218 seconds when she dived to a depth of 121 metres on Monday July 21st 2003, breaking the male and female world records. Her heart rate slowed to 15 beats per minute and her lungs compressed to the size of scrunched up plastic bags.

(a) Complete.

218 seconds is the same as		minutes and		seconds
----------------------------	--	-------------	--	---------

[2]

(b) About how many feet is 121 metres?
Ring the closest answer.

40	300	350	400	480	500
----	-----	-----	-----	-----	-----

[1]

(c)

The next day Tanya set another world record for a single breath dive, this time without fins. She descended to a depth of 115 feet, resurfacing after 1 minute and 44 seconds.

How much deeper is 121 metres than 115 feet?
Show all your working.
Give the units of your answer.

(c) _____ [3]

(d) This table shows the previous records.

Free-Dive World Records		
Female	Deborah Andollo	311.7 feet
Male	Patrick Musimu	393.7 feet

Work out the difference between the female and male records.

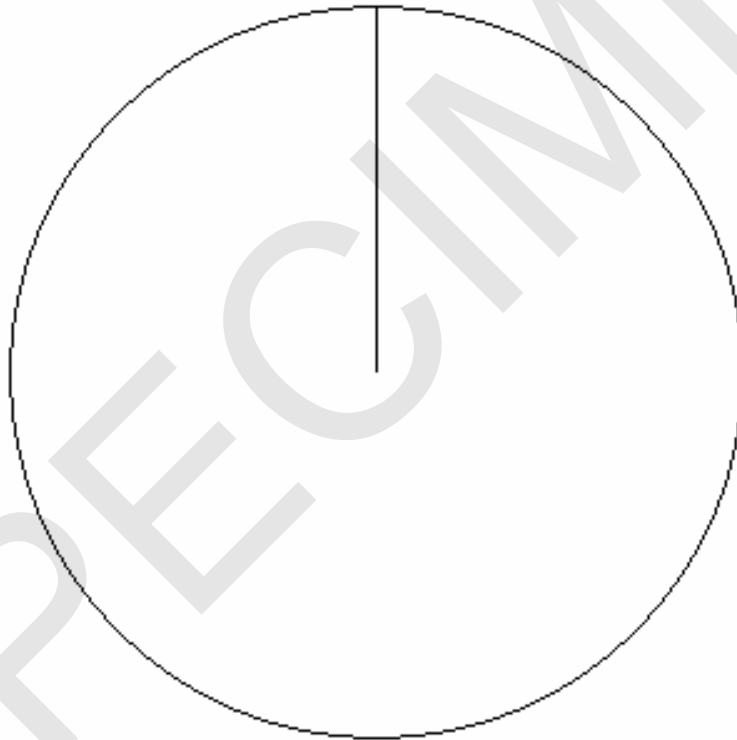
(d) _____ feet [2]

8

- 16** In an election, 180 people voted.
The table shows the number who voted for each party.

Party	Number of Votes
Labour	36
Conservative	72
Lib. Dem.	45
Independent	27

Draw and label a pie chart to illustrate the data.



[4]

4

[Turn over

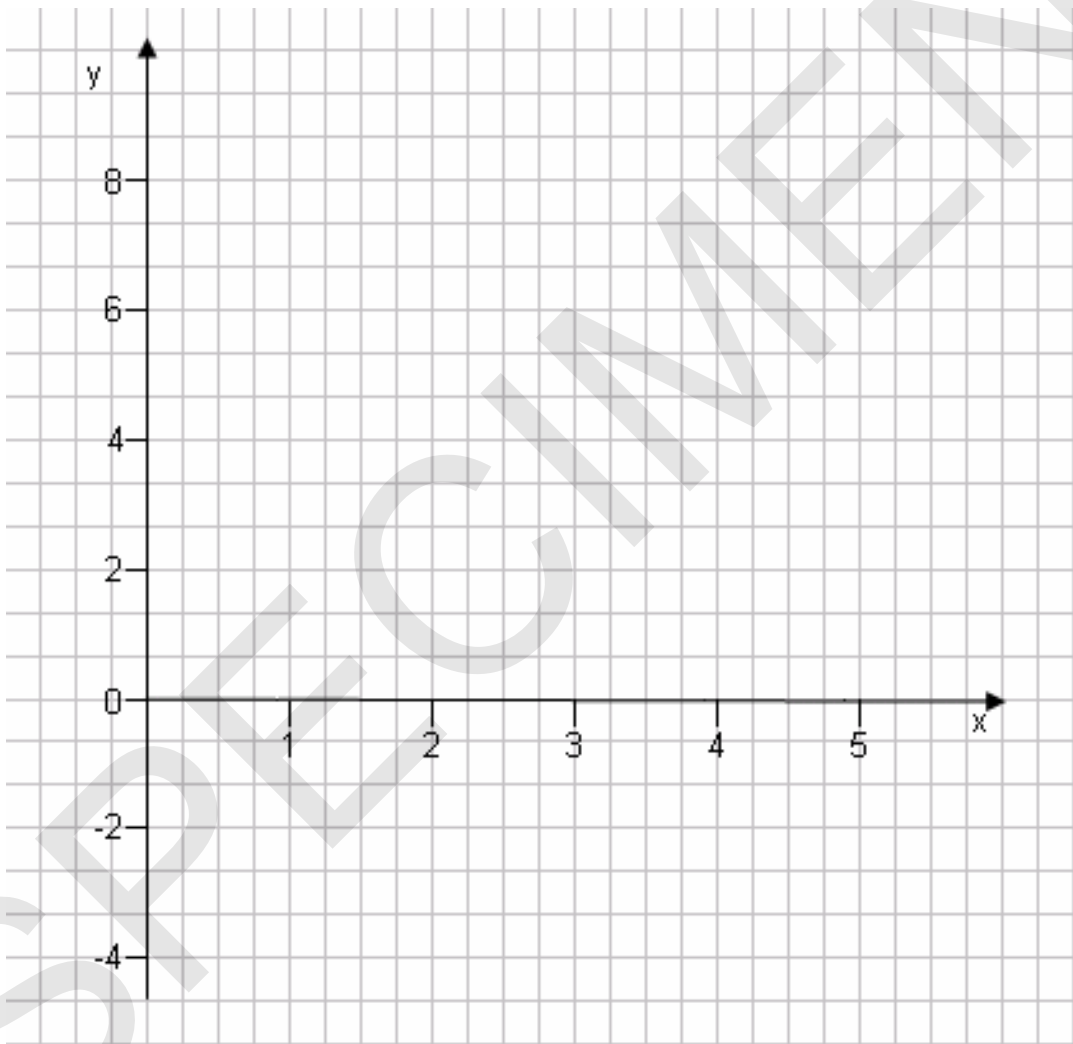
17 (a) Complete the table for $y = 2x - 3$.

x	0	1	2	3	4	5
y	-3	-1			5	

[1]

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

[2]

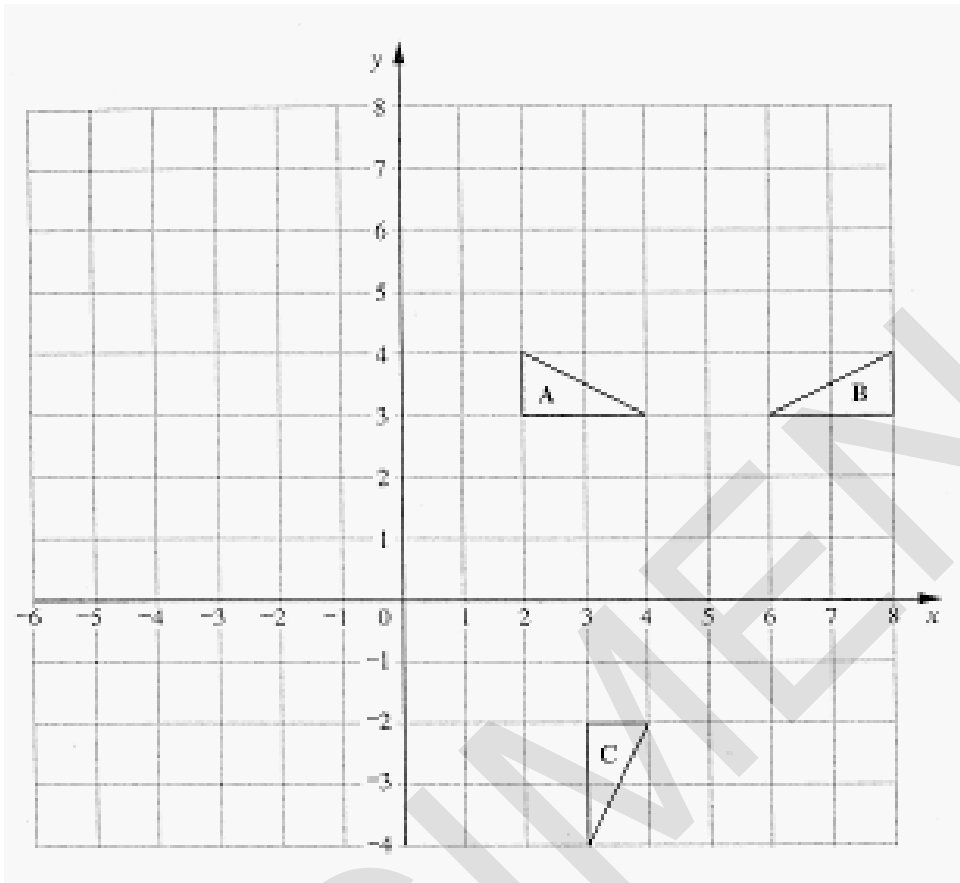


(c) Use your graph to find x when $y = 0$.

[1]

4	
---	--

18



- (a) Complete this description of the **single** transformation which maps triangle **A** onto triangle **B**.

Reflection in _____ [1]

- (b) Describe the full **single** transformation which maps triangle **A** onto triangle **C**.

 _____ [3]

- (c) Translate triangle **A** by 6 squares left and 3 squares down.
 Label your triangle **D**.

[1]

5

[Turn over

19 Maria took part in a sponsored run.
 She shared the money she raised between
 Childline and Macmillan Nurses in the ratio
 3 : 5.
 She gave Macmillan Nurses £195.
 How much did she give to Childline?



£ _____ [2]

20 (a) Write 36 as the product of prime factors.

2

(a) _____ [2]

(b) Find the lowest common multiple (LCM) of 36 and 48.

(b) _____ [2]

4
[T] _____

- 21** In a survey, 800 people were asked whether they travelled abroad last year. This table summarises the results.

	Travelled abroad	Didn't travel abroad	Totals
Male	245	235	480
Female	144	176	320
Totals	389	411	800

- (a) Calculate the percentage of people who took part in the survey who were male.

(a) _____ % [2]

- (b) In the survey, people were also asked about their age. Some people are offended if you ask their actual age.

Write a suitable question to obtain information about age without giving offence.

[2]

4

Section B Total [50]

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SPECIMEN

The maximum mark for this section is 50.

SPECIMEN

11	(a)(i) (ii) (b) (c)	31 take away 4 oe 17, 19 - take away 10, add 2 alternately 66	B1 B1 B1 M1A1	6	M1 10 x 6 + 6
12	(a) (b) (c)	3 symbols rainy 3	B1 B1 B1	3	
13		Correct reflections	B2 B2	4	B1 for two sides correct B1 for two sides correct
14	(a) (b) (c)	C A or D B 20 cm 30 exterior angle of triangle is equal to sum of two interior opposites	B2 M1A1 B1 B1	6	M1 4 + 4 + 7 + 5 (± 2.5 mm) or sum of angles in triangle is 180° and angles on a straight line add to 180°
15	(a) (b) (c) (d)	3 minutes 38 secs 400 288 feet or 86.5 m 82 feet	B1 B1 B1 M2A1 M1A1	8	M1 using 12ins=1foot, 1inch = 2.5 cm M1 403-115 or 121-34.5 M1 393.7-311.7
16		Sectors 72, 144, 90, 54 with labels	B4	4	B3 all correct no labels B2 2 correct sector B1 Correct sector After B0 multiplying by 2 soi
17	(a) (b) (c)	1, 3, 7 Points plotted Straight line $x = 1 \frac{1}{2}$	1 1 1 1 [^]	4	

18	(a) $x = 5$ (b) Rotation, 90° centre (0,0) (c) D correct	B1 B1 B1 B1 B1	5	
19	£117	M1A1	2	M1 $195 \div 5 \times 3$ oe
20	(a) $2^2 \times 3^2$ or $2 \times 2 \times 3 \times 3$ (b) 144	B2 B2	4	B1 2^2 or 3^2 B1 $2 \times 2 \times 2 \times 2 \times 3$ seen
21	(a) $\frac{480}{800} [\times 100] = 60\%$ (b) polite, clear unbiased question asking for age range list of categories covering age range without overlap	M1A1 W1 W1	4	

Section B Total 50

Assessment Objectives Grid

Question	AO2	AO3	AO4	Total
11	6			6
12			3	3
13		4		4
14		6		6
15	2	6		8
16			4	4
17	4			4
18		5		5
19	2			2
20	4			4
21			4	4
Totals	18	21	11	50

SPECIMEN