

THIS IS A NEW SPECIFICATION

**F****GENERAL CERTIFICATE OF SECONDARY EDUCATION****MATHEMATICS A**

Unit A (Foundation Tier)

A501/01

Candidates answer on the question paper.

OCR supplied materials:

None

Other materials required:

- Scientific or graphical calculator
- Geometrical instruments
- Tracing paper (optional)

Wednesday 9 November 2011**Afternoon****Duration: 1 hour**

Candidate forename		Candidate surname	
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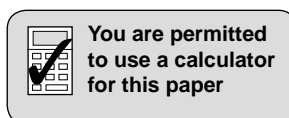
Centre number						Candidate number				
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INSTRUCTIONS TO CANDIDATES

- Write your name, centre number and candidate number in the boxes above. Please write clearly and in capital letters.
- Use black ink. Pencil may be used for graphs and diagrams only.
- Read each question carefully. Make sure you know what you have to do before starting your answer.
- Your answers should be supported with appropriate working. Marks may be given for a correct method even if the answer is incorrect.
- 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).
- Answer **all** the questions.
- Do **not** write in the bar codes.

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 paper is **60**.
- This document consists of **16** pages. Any blank pages are indicated.

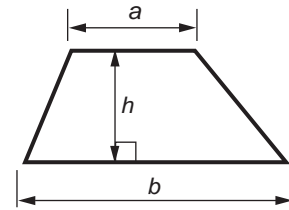


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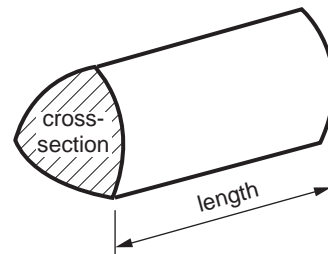
2

Formulae Sheet: Foundation Tier

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



Volume of prism = (area of cross-section) \times length



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3

1 Look at the numbers in this list.

13	20	18	44	16	35	45
----	----	----	----	----	----	----

Choose from the numbers in this list

(a) a multiple of 11,

(a) _____ [1]

(b) a number which is divisible by 3,

(b) _____ [1]

(c) two numbers with a difference of 17,

(c) _____ and _____ [1]

(d) a square number,

(d) _____ [1]

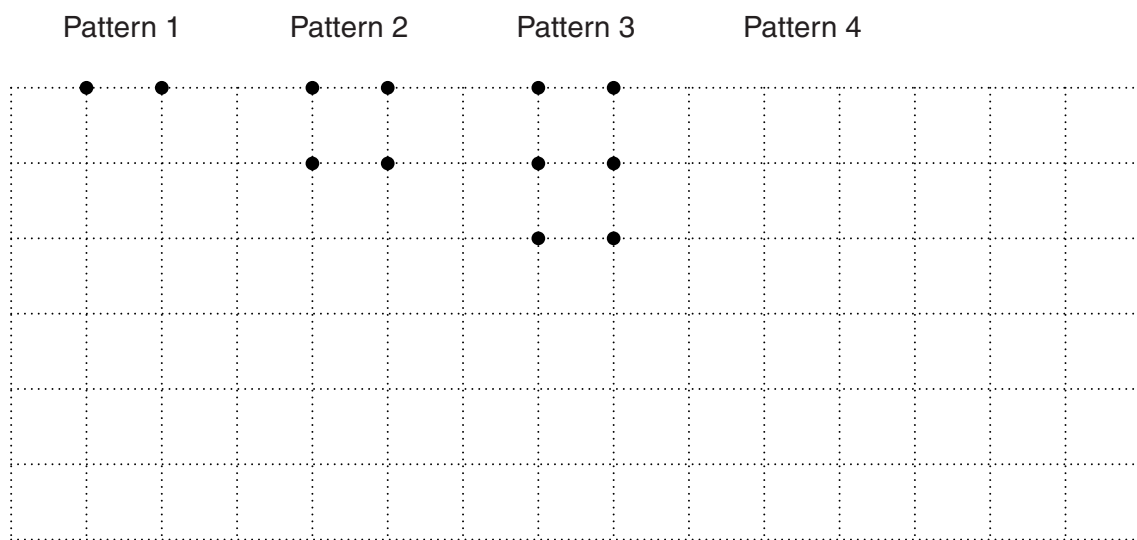
(e) a prime number,

(e) _____ [1]

(f) a number which has both 5 and 7 as factors.

(f) _____ [1]

2 Here are the first three dot-patterns in a sequence.



(a) Draw Pattern 4. [1]

(b) Complete this table.

Pattern number	1	2	3	4	5
Number of dots	2	4			

[1]

(c) How many dots are in Pattern 15?

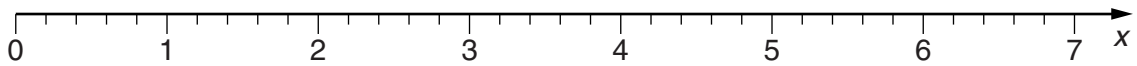
(c) _____ [1]

(d) Write down the special name for the sequence given by the numbers of dots.

(d) _____ [1]

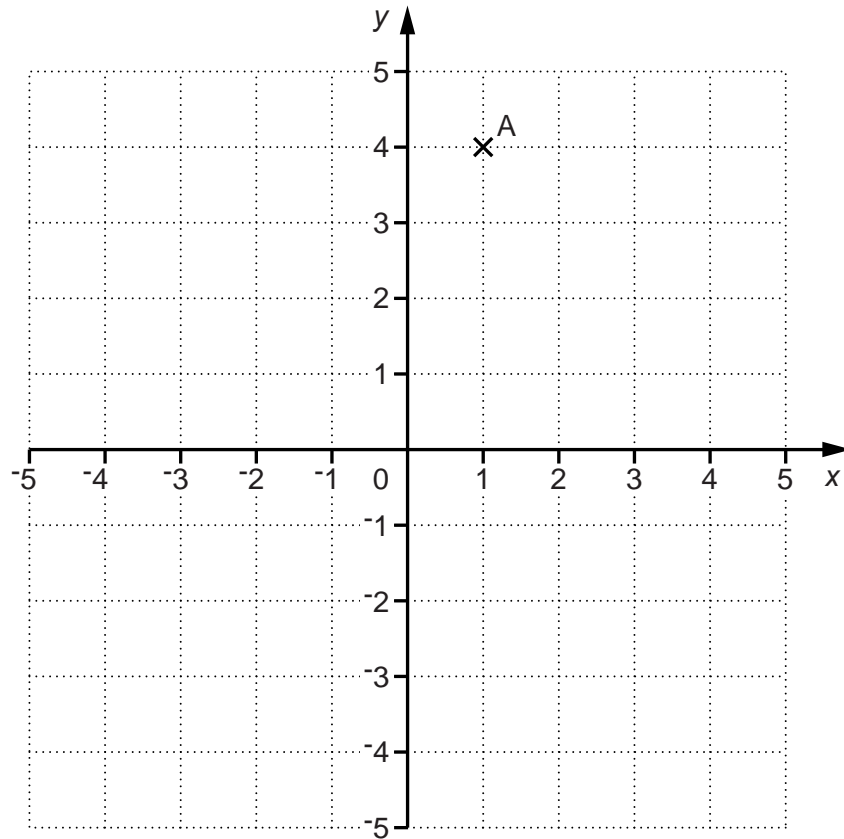
5

- 3 (a) Mark the position of 5.4 on this number line.



[1]

(b)



- (i) Write down the coordinates of point A.

(b)(i) (_____ , _____) [1]

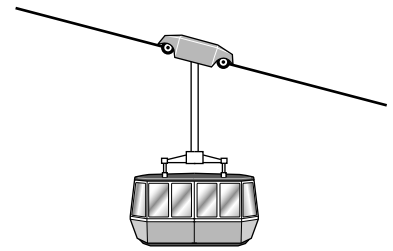
- (ii) On the grid, plot and label point B (-3, 1).

[1]

6

- 4 (a) The cable car journey up Table Mountain takes 4 minutes. During the journey the cable car rotates 360° so that the passengers can all enjoy the views.

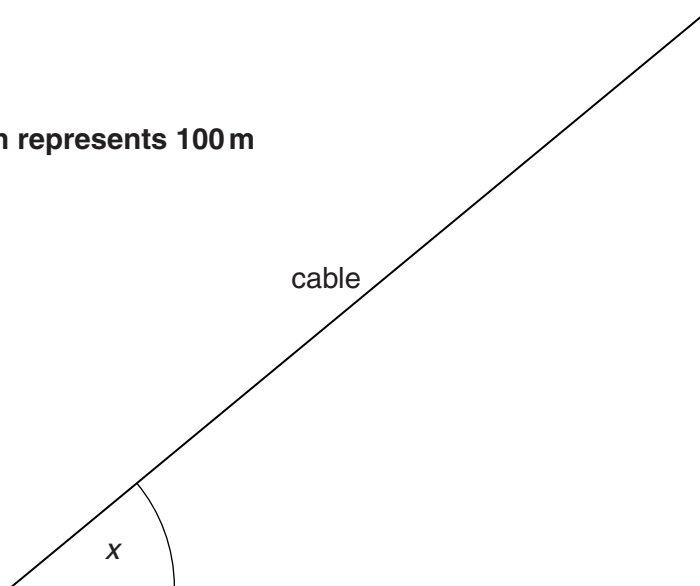
How many degrees does it rotate in one second?



(a) _____ $^\circ$ [2]

- (b) This scale drawing shows the cable.

Scale: 1 cm represents 100 m



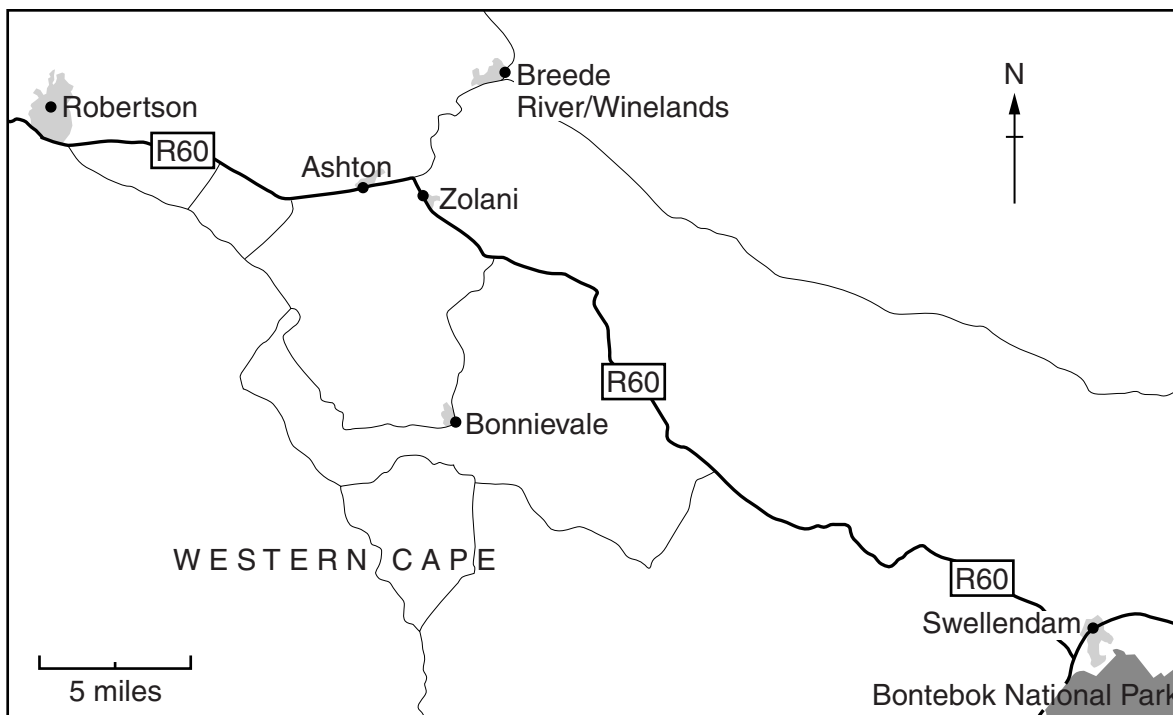
- (i) Measure x , the angle that the cable makes with the horizontal.

(b)(i) _____ $^\circ$ [1]

- (ii) Find the length of the cable up Table Mountain.

(ii) _____ m [2]

(c) This map shows part of South Africa.



(i) What is the compass direction of Swellendam from Robertson?
Choose from this list.

- NE SE NW SW

(c)(i) _____ [1]

(ii) Colin drives along the R60 from Robertson to Swellendam.

Estimate the distance he travels.

(ii) _____ miles [2]

8

5 Stella and Vivek are planning a holiday in France.

- (a) Here is the ferry timetable that they are using.
It shows the UK times that the ferry leaves Dover.
They need to arrive at Dover for check-in at least 45 minutes before the ferry leaves.

Dover to Calais	
Crossing time: 90 minutes	
	06:40
	08:30
	09:25
	10:20
	11:10
	13:00
	13:55

Stella and Vivek need to allow 2 hours to drive to Dover.
They want to arrive in Calais no later than 12:00 UK time.
They do not want to leave home before 06:00.

Work out a possible timetable for their journey and complete the table below.

	UK time
Leave home	
Arrive at Dover	
Ferry leaves Dover	
Ferry arrives in Calais	

[5]

9

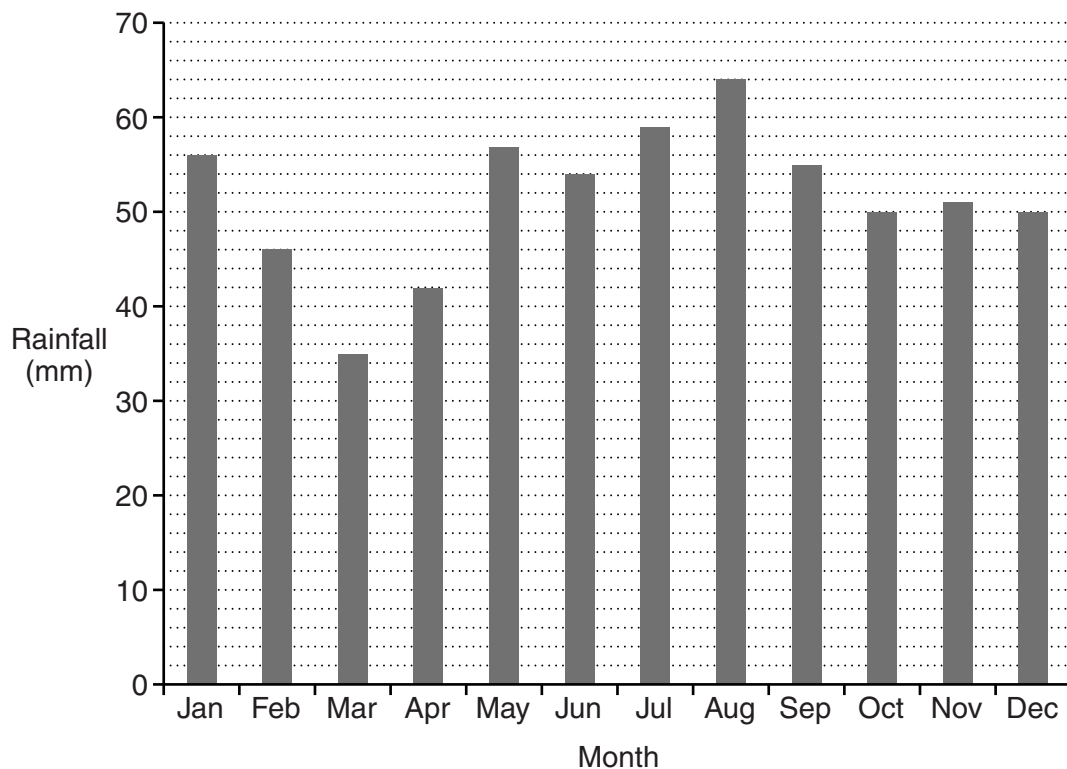
(b) The distance from Calais to Paris is 290 km.

Use this word formula to find the distance in miles.

Distance in miles = distance in kilometres \div 1.6

(b) _____ miles [1]

(c) Stella looks at this graph, which shows the monthly rainfall in Paris.



(i) Which month has the least rainfall?

(c)(i) _____ [1]

(ii) How many months have more than 52 mm of rainfall?

(ii) _____ [1]

(iii) How many more millimetres of rainfall are there in August than in July?

(iii) _____ mm [1]

10

6 (a) Simplify.

$$12a - 5a + 3a$$

(a) _____ [1]

(b) Solve.

(i) $b + 3 = 20$

(b)(i) _____ [1]

(ii) $2c - 6 = 1$

(ii) _____ [2]

11

- 7 (a) Wyn buys 12 *Flakes* and pays £7.56.

How many pence is this for one *Flake*?

(a) _____ p [2]

- (b) Janine buys 5 *Snowbars* and pays £3.85.

What would she pay for 3 *Snowbars*?

(b) £ _____ [2]

12

- 8 Adia buys 10m of ribbon.
She cuts off these three lengths.

- 83cm
- 2m 41cm
- 4m 34cm

What length of ribbon does she have left?
Give your answer in metres and centimetres.

_____ m _____ cm [4]

13

- 9 (a) Debi makes bread.
She always uses brown flour and white flour in the ratio 2 : 1.

(i) For a medium loaf of bread she needs 420 g of flour altogether.

How much brown flour does she need for a medium loaf?

(a)(i) _____ g [2]

(ii) For a large loaf she uses 360 g of brown flour.

How much flour does she use altogether for a large loaf?

(ii) _____ g [2]

- (b) Tim makes a medium loaf using wholemeal flour and white flour.
He uses 260 g of wholemeal flour and 160 g of white flour.

Write the ratio

wholemeal flour : white flour

that Tim uses.

Give your answer in its simplest form.

(b) _____ [2]

14

- 10** Use a pair of compasses and a ruler to answer this question.
Do not rub out your construction lines.

The scale drawing shows two schools, Ashton (A) and Bedward (B).

Scale: 2 cm represents 1 mile



Students who go to Ashton School live 3 miles or less from the school.

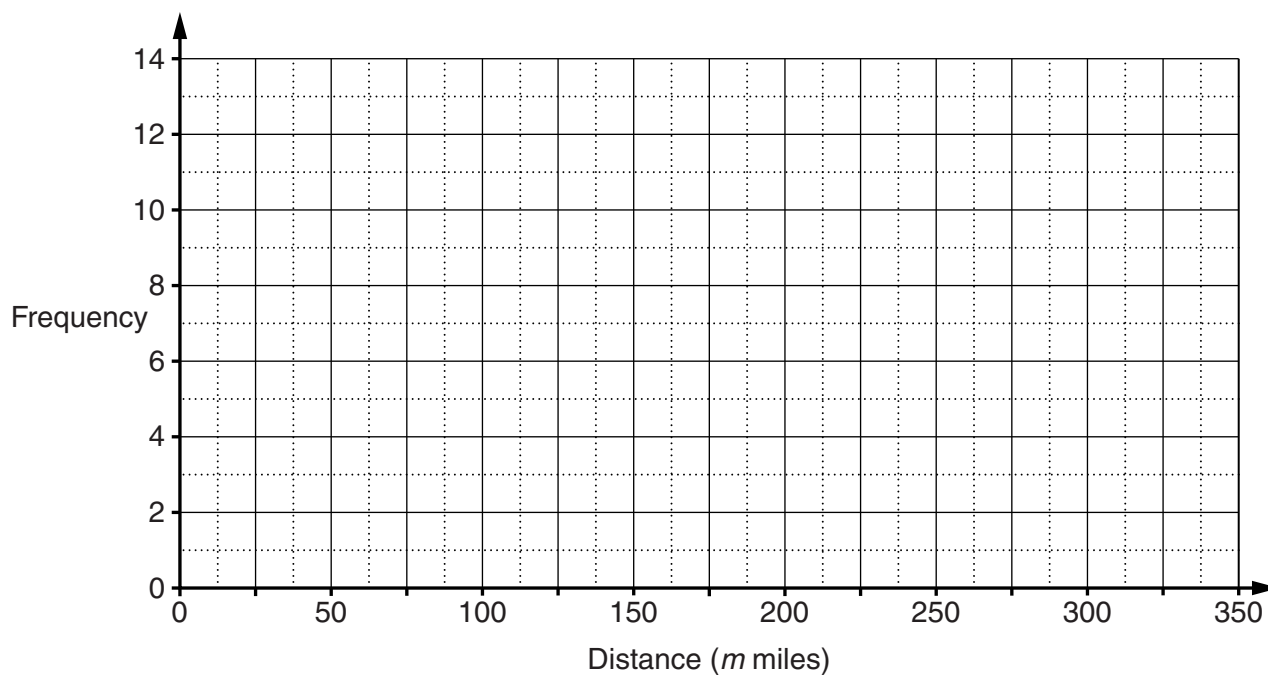
Construct and shade the area where students can live who go to Ashton School even though they live nearer to Bedward School. **[5]**

15

- 11 Mukulika asked 50 drivers how many miles they had travelled that day. This table summarises their responses.

Distance (m miles)	Frequency
$0 < m \leq 50$	7
$50 < m \leq 100$	10
$100 < m \leq 150$	14
$150 < m \leq 200$	9
$200 < m \leq 250$	5
$250 < m \leq 300$	3
$300 < m \leq 350$	2

- (a) Draw a frequency polygon to represent this information.



[3]

- (b) Calculate an estimate of the mean distance travelled.

(b) _____ miles [4]

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