THIS IS A NEW SPECIFICATION

OCR
RECOGNISING ACHIEVEMENT

F

GENERAL CERTIFICATE OF SECONDARY EDUCATION

MATHEMATICS A

A501/01

Unit A (Foundation Tier)

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	

Centre number						Candidate number				

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.

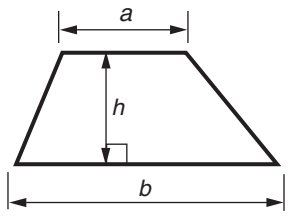
You are permitted to use a calculator for this paper

This paper has been pre modified for carrier language

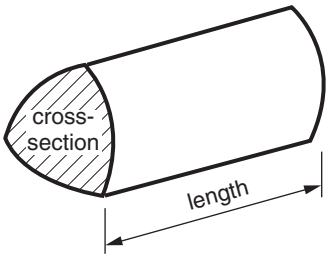
DC (LEO/CGW) 44975/5

Formulae Sheet: Foundation Tier

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



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



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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]**

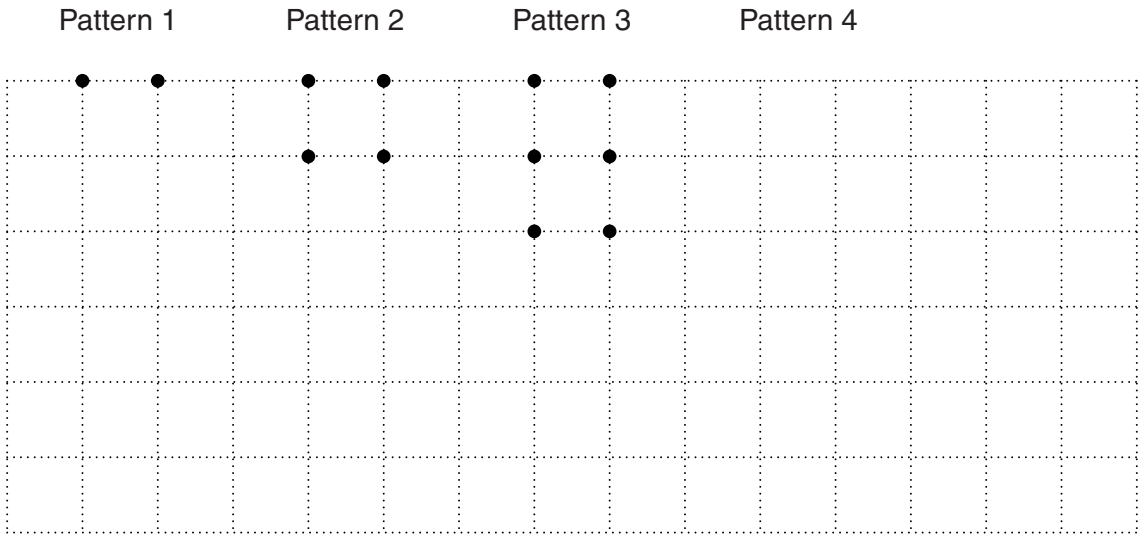
(e) a prime number,

(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]

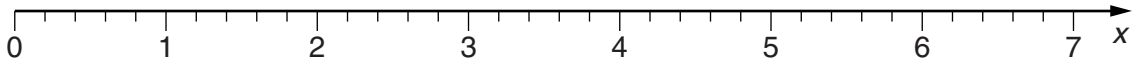
(c) How many dots are in Pattern 15?

(c) _____ **[1]**

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

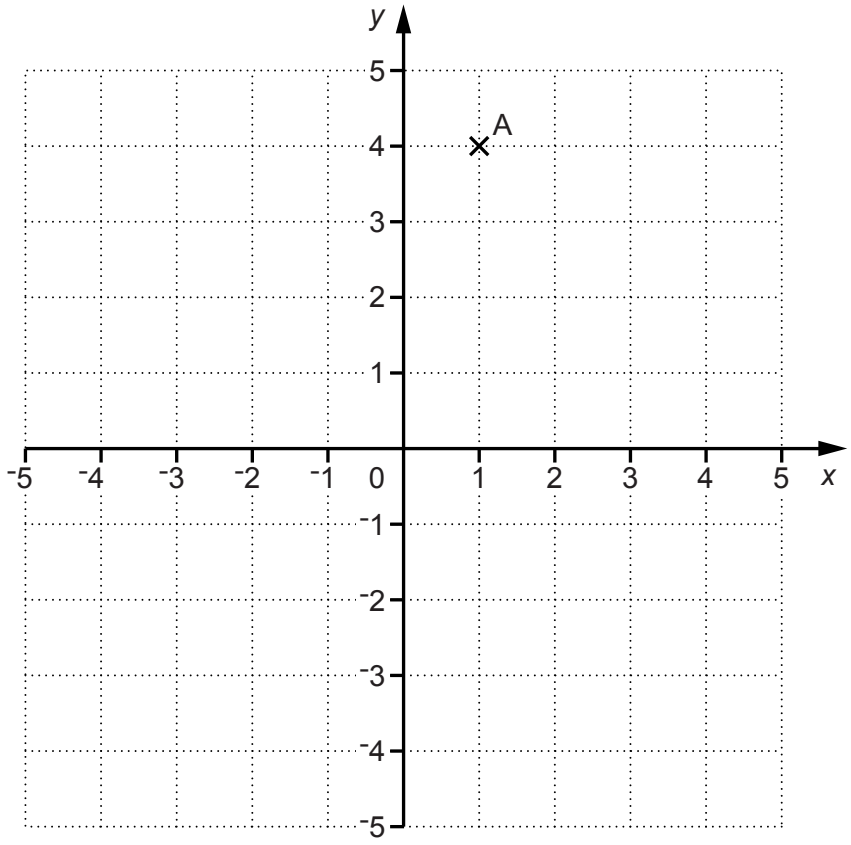
(d) _____ **[1]**

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



[1]

(b)



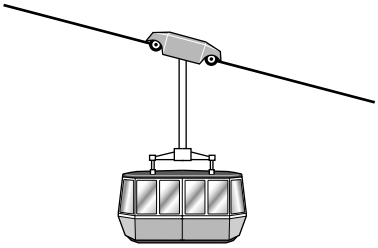
(i) Write down the coordinates of point A.

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

(ii) On the grid, plot and label point B ($^{-}3$, 1). **[1]**

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.

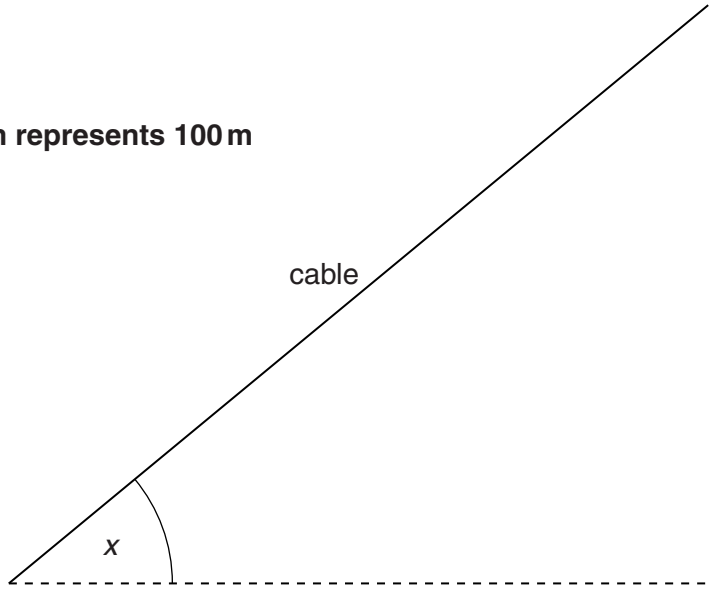
How many degrees does it rotate in one second?



(a) _____ ° **[2]**

(b) This scale drawing shows the cable.

Scale: 1 cm represents 100 m



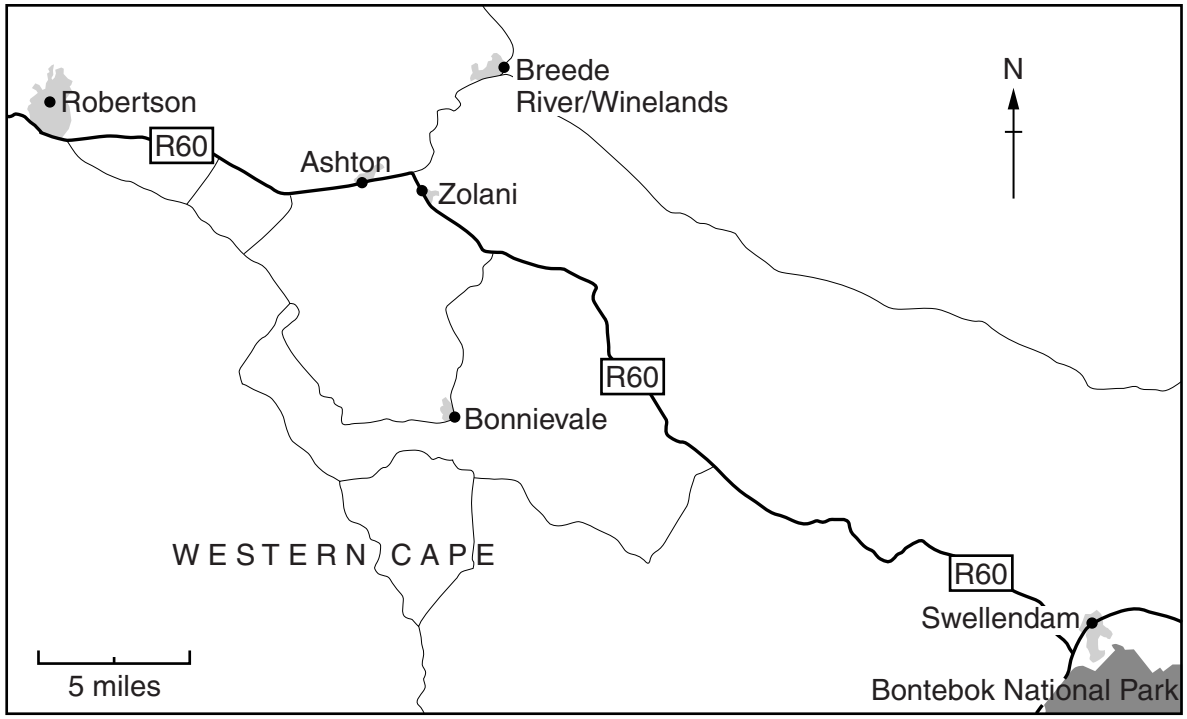
(i) Measure *x*, the angle that the cable makes with the horizontal.

(b)(i) _____ ° **[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]**

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]

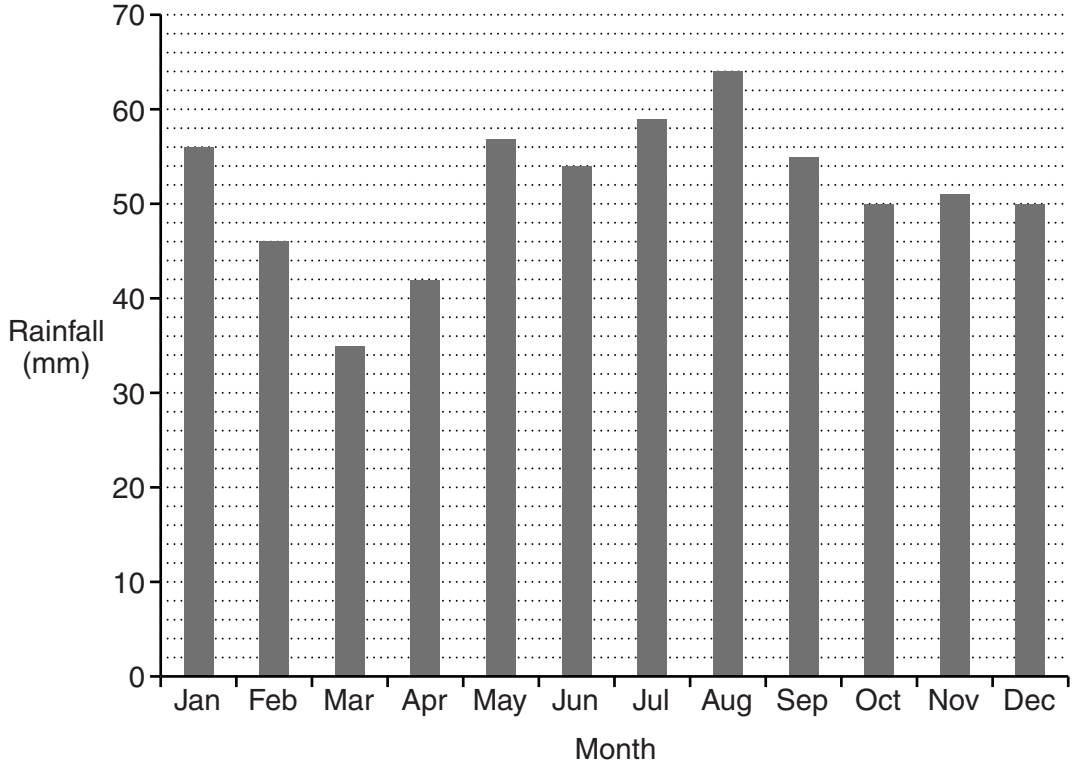
(b) The distance from Calais to Paris is 290 km.

Use this word formula to find the distance in miles.

Distance in miles = distance in kilometres ÷ 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]**

6 **(a)** Simplify.

$12a - 5a + 3a$

(a) _____ **[1]**

(b) Solve.

(i) $b + 3 = 20$

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

(ii) $2c - 6 = 1$

(ii) _____ **[2]**

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]**

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

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

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

_____ m _____ cm **[4]**

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]**

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

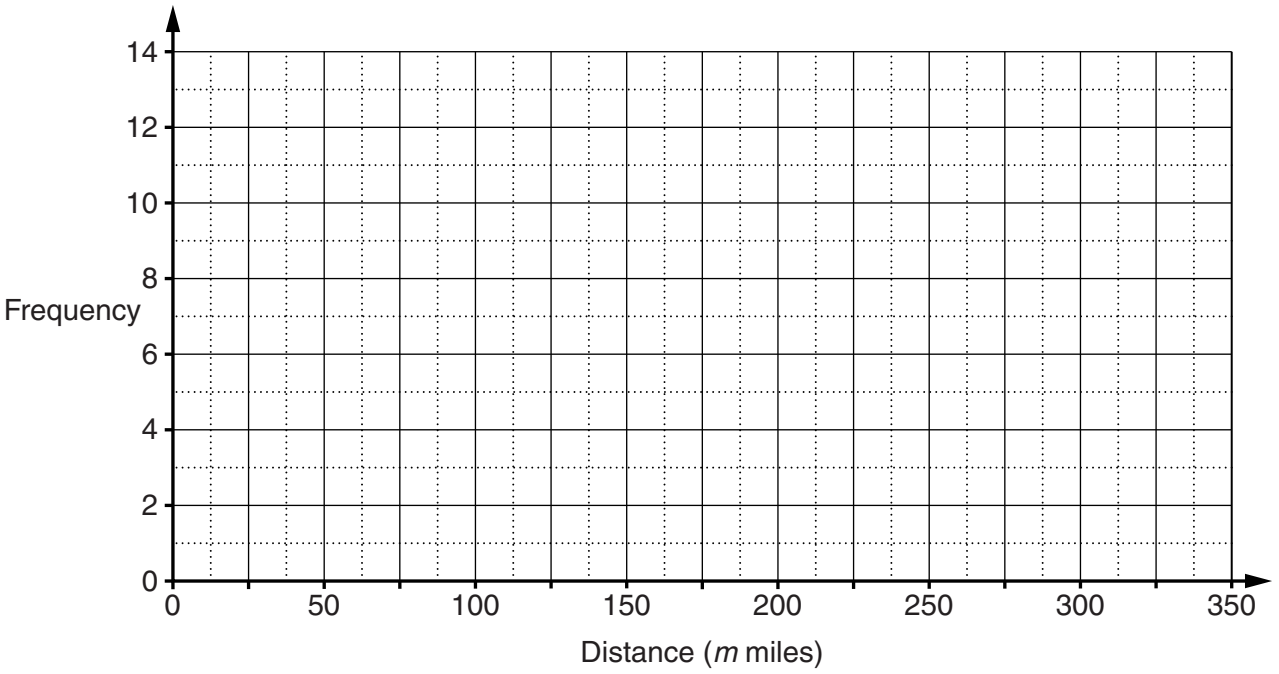
Students who go to Ashton School live 3 miles or less from the school.

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

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

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