Surname	Centre Number	Candidate Number
Other Names		0

WJEC CBAC

GCSE

185/07

MATHEMATICS

FOUNDATION TIER

PAPER 1

P.M. WEDNESDAY, 9 November 2011

2 hours

For Examiner's use only		
Question	Maximum Mark	Mark Awarded
1	11	
2	8	
3	7	
4	5	
5	4	
6	5	
7	3	
8	5	
9	4	
10	7	
11	6	
12	5	
13	4	
14	5	
15	6	
16	7	
17	4	
18	4	
TOTAL MARK		

CALCULATORS ARE NOT TO BE USED FOR THIS PAPER

INSTRUCTIONS TO CANDIDATES

Use black ink or black ball-point pen.

Write your name, centre number and candidate number in the spaces at the top of this page.

Answer **all** the questions in the spaces provided.

Take π as 3·14.

INFORMATION FOR CANDIDATES

You should give details of your method of solution when appropriate.

Unless stated, diagrams are not drawn to scale.

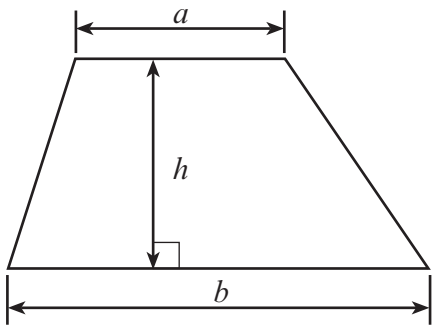
Scale drawing solutions will not be acceptable where you are asked to calculate.

The number of marks is given in brackets at the end of each question or part-question.

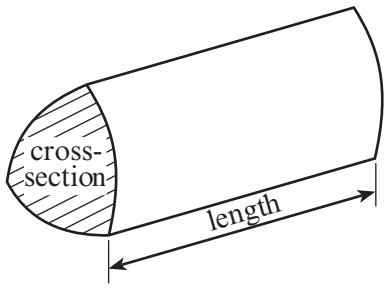
0185 070001

Formula List

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



Volume of prism = area of cross-section × length



Examiner only

1. *(a)* (i) Write down, in figures, the number twenty three thousand and sixty two.

.....

(ii) Write down, in words, the number 85 105.

.....

[2]

(b) Using only the numbers in the following list,

47 54 88 23 49 46 33

write down

(i) two numbers that add up to 70,

.....

(ii) two numbers which differ by 42,

.....

(iii) a multiple of 7.

.....

[3]

(c) Write 5627

(i) correct to the nearest 10,

.....

(ii) correct to the nearest 100.

.....

[2]

(d) Write down all the factors of 15.

.....

.....

.....

[2]

(e) Tim uses each of the digits 3, 9, 2 and 8, once and once only, to make four-digit numbers.

(i) What is the largest number that he can make?

.....

(ii) What is the smallest even number that he can make?

.....

[2]

0185 070003

Examiner only

2. Bethan reads a poem and writes down each of the letters A, E, N, S and T as they appear. Her results are shown below.

A	N	N	S	N	E	A	E	E	N
E	N	A	E	S	N	S	N	A	A
N	A	E	N	N	S	E	E	E	A
S	T	E	E	S	N	E	S	A	A

(a) Complete the frequency table below.

Letter	Tally	Frequency
A		
E		
N		
S		
T		
	Total	.....

[3]

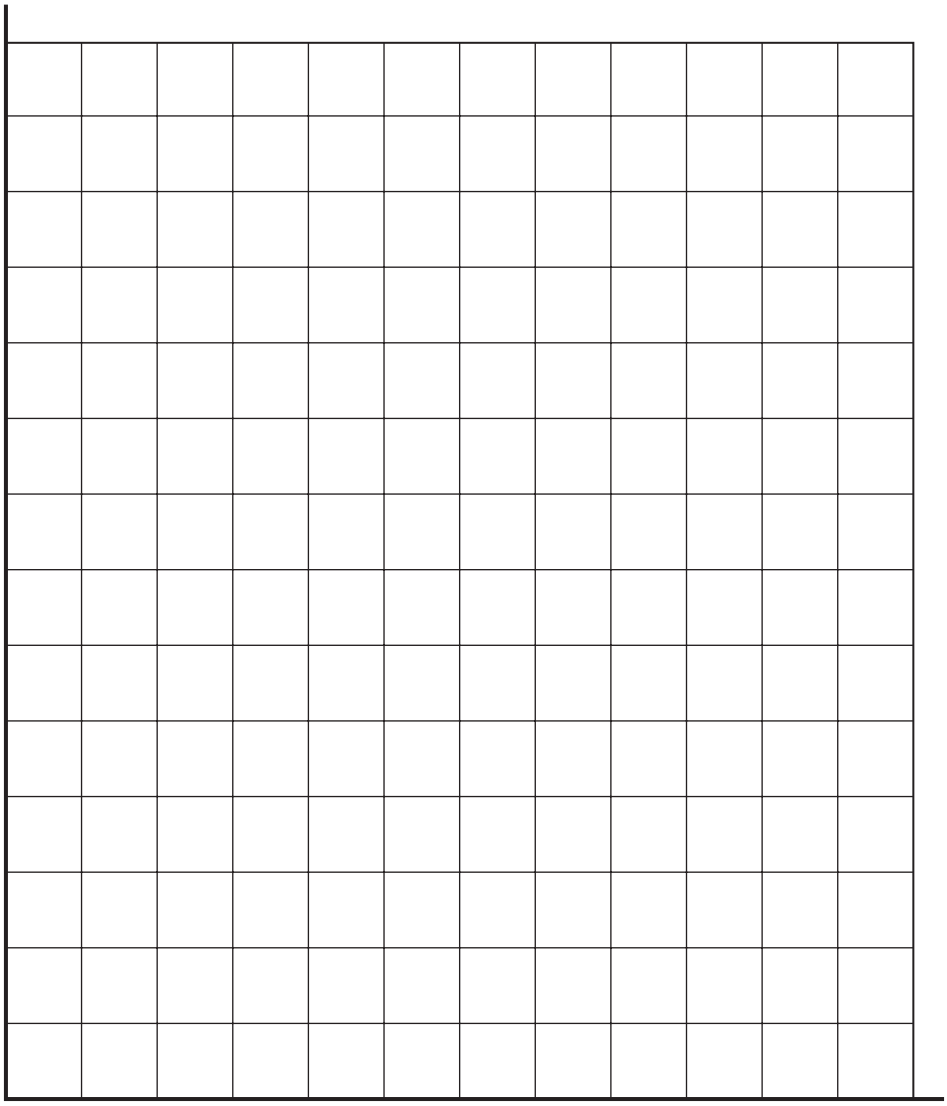
(b) Write down the mode .....

[1]

Examiner only

(c) Using the squared paper below, draw a suitable bar chart for the data given in the table.

[4]



0185 070005

Examiner only

3. *(a)* Draw a line connecting each of the following words to the correct shape.
One has been done for you.

[4]

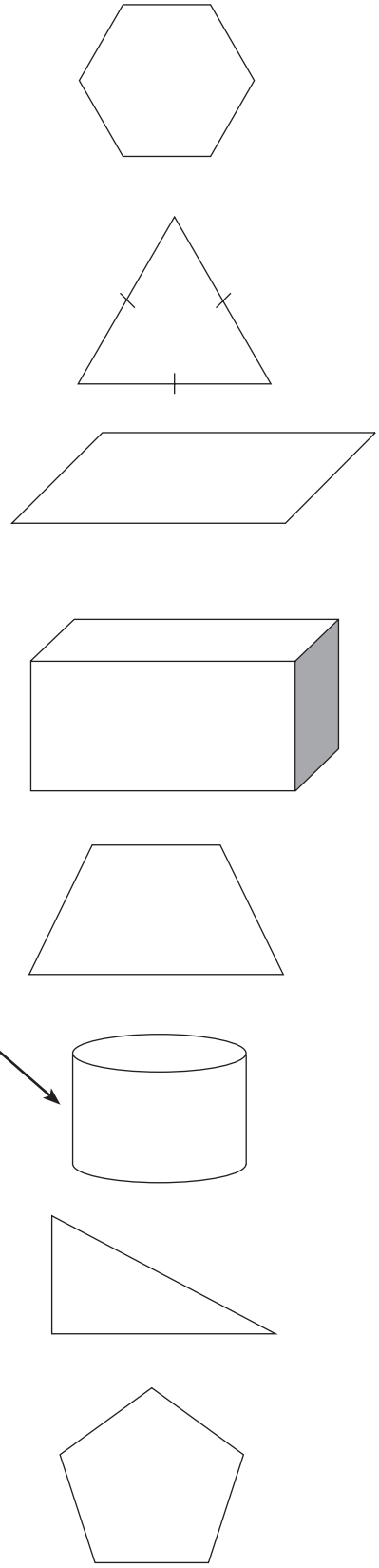
Cuboid

Cylinder

Trapezium

Pentagon

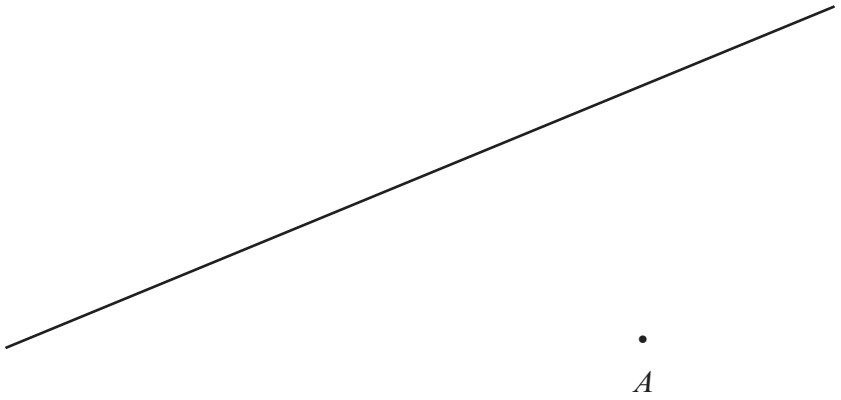
Equilateral triangle



Examiner only

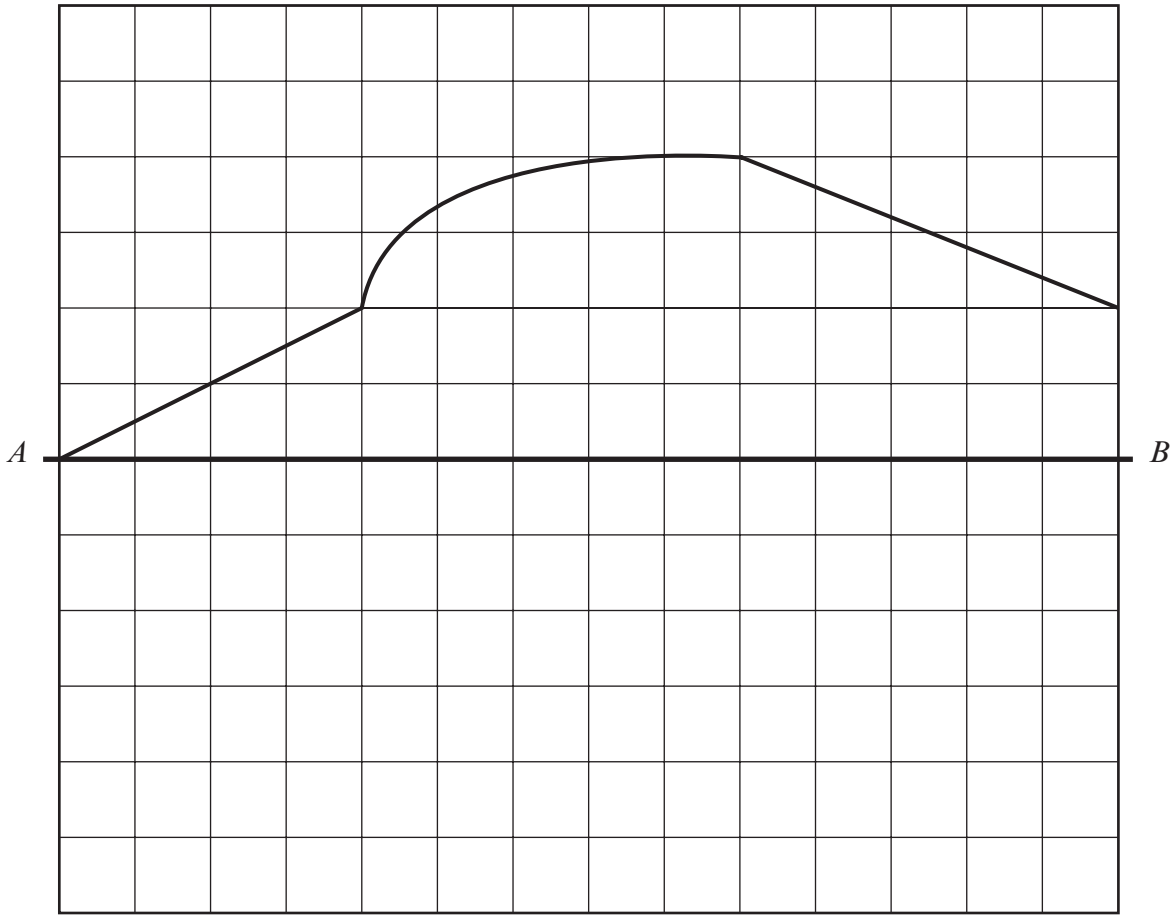
(b) Draw a line through the point A that is parallel to the given line below.

[1]



(c) Copy the shape below so that AB is a line of symmetry.

[2]



Examiner only

4. *(a)* Write down the next term in **each** of the following sequences.

(i) 16, 22, 28, 34, ...

(ii) 90, 82, 74, 66, ...

.....

.....

[2]

(b) Write $\frac{3}{4}$ as a decimal .....

Write 76% as a decimal .....

Write $\frac{3}{4}$, 76% and 0·72 in ascending order.

.....

.....

.....

.....

[3]

Examiner only

5. The diagram represents an 11 cm by 5 cm rectangle.

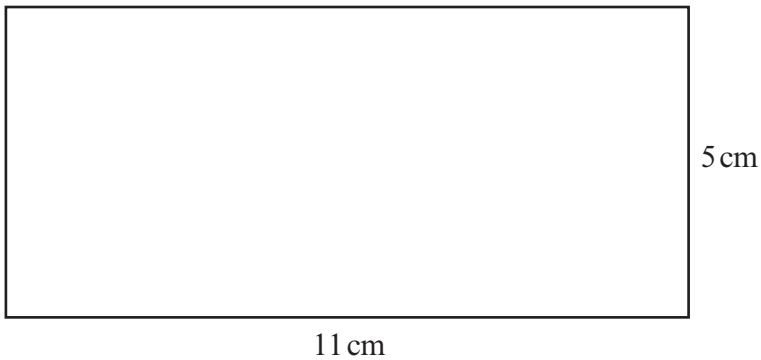


Diagram not drawn to scale

(a) Calculate the area of the rectangle, giving the units of your answer.

.....

.....

..... [3]

(b) Calculate the perimeter of the rectangle.

.....

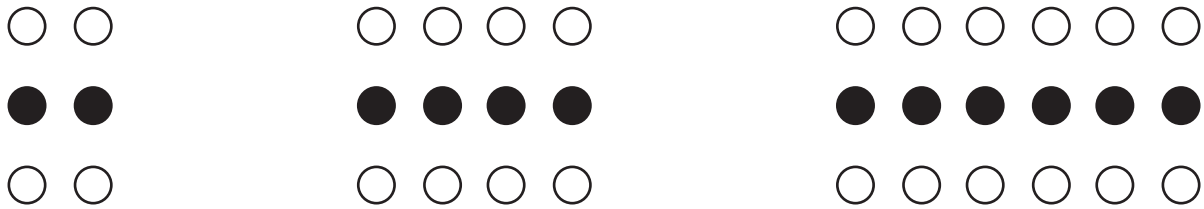
.....

..... [1]

0185 070009

Examiner only

6. The following patterns have been made using black discs and white discs.



Pattern 1 Pattern 2 Pattern 3

(a) Draw Pattern 4 in the space below.

[1]

(b) Complete the following table.

Pattern number	1	2	3	4	5
Number of black discs	2	4	6		
Number of white discs	4	8	12		

[2]

(c) Without drawing any more patterns, answer the following two questions.

(i) Write down the number of black discs in Pattern 45.

.....

.....

(ii) In a certain pattern there are 200 white discs. How many black discs are there in that pattern?

.....

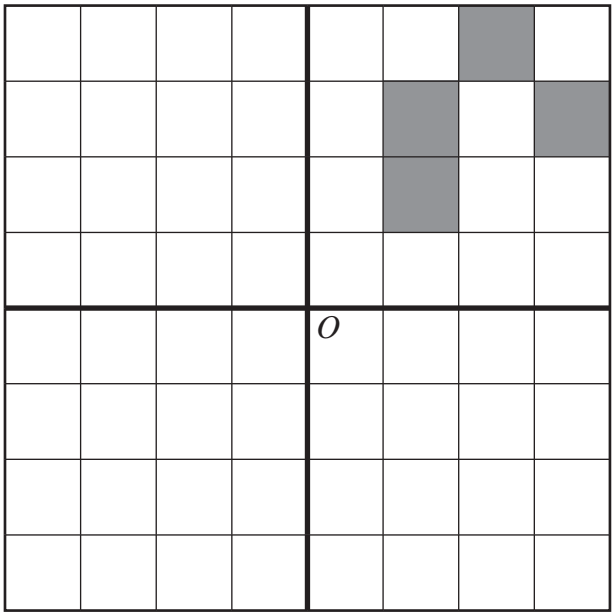
.....

[2]

Examiner only

7. Draw patterns like the given one in each of the other 3 sections so that the completed pattern has rotational symmetry of order 4 about O.

[3]



8. *(a)* A full crate holds 36 bottles.
A farmer has 48 full crates.
How many bottles is this?

.....

.....

.....

.....

.....

.....

.....

.....

.....

[3]

(b) Calculate 8% of 300.

.....

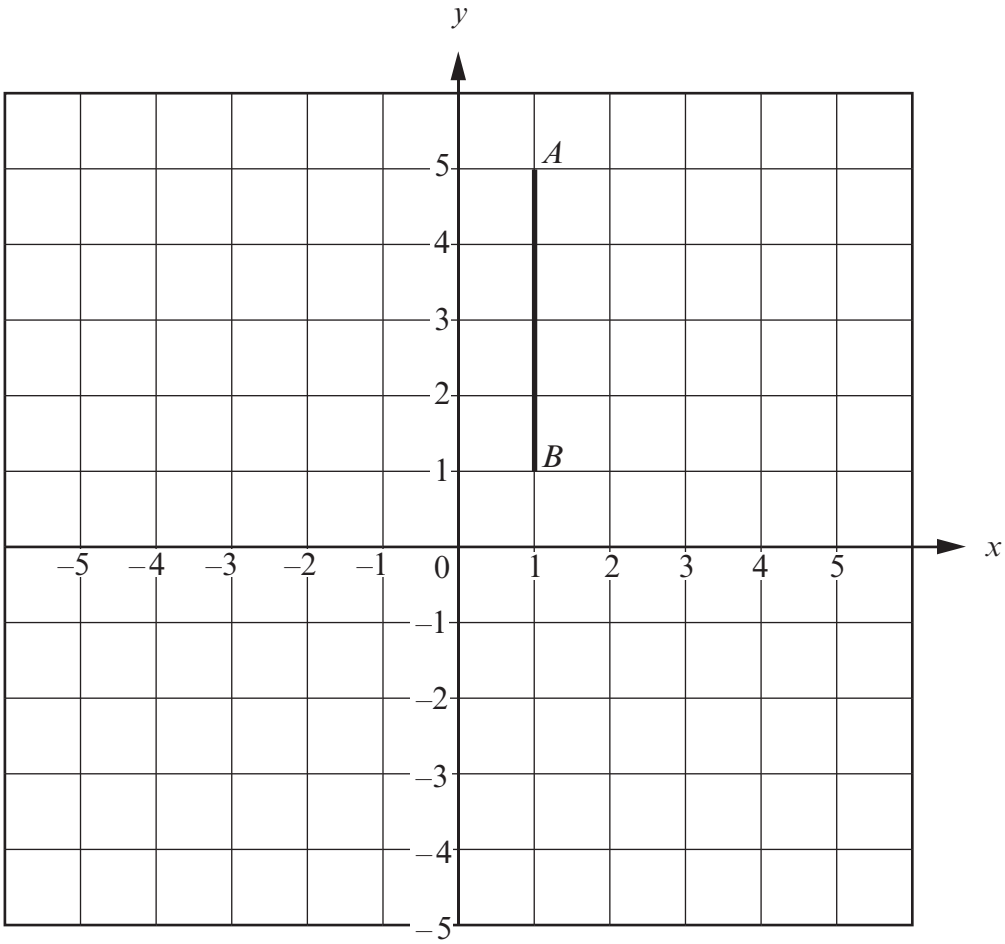
.....

.....

[2]

Examiner only

9. AB is one of the two equal sides of a right-angled isosceles triangle ABC.
Find all possible positions for the point C and write down their coordinates.



.....

.....

.....

.....

.....

.....

[4]

Examiner only

10. *(a)* Jack has x pence.
Jill has 8 pence less than Jack.
Write down, in terms of x, the number of pence that Jill has.

.....

[1]

(b) A box weighs 70 grams.
Write down, in terms of b, the weight of b boxes.

.....

[1]

(c) Find the value of $3x + 4y$ when $x = -2$ and $y = 5$.

.....

[2]

(d) Simplify $4c - 5d + 3c + 2d$.

.....

.....

.....

.....

.....

[2]

(e) Expand $2(x + 3)$.

.....

.....

[1]

Examiner only

11. *(a)* Calculate the size of the angle marked x.

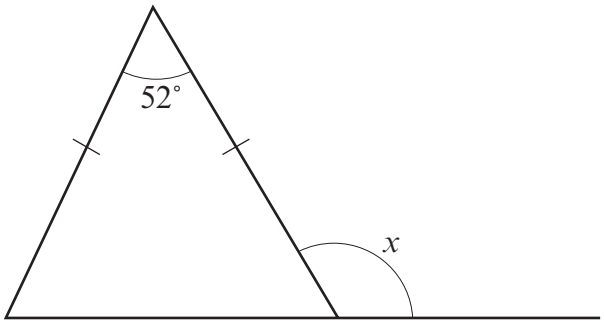


Diagram not drawn to scale

.....

.....

.....

.....

x = ... °

[3]

(b) Calculate the size of the angle marked y.

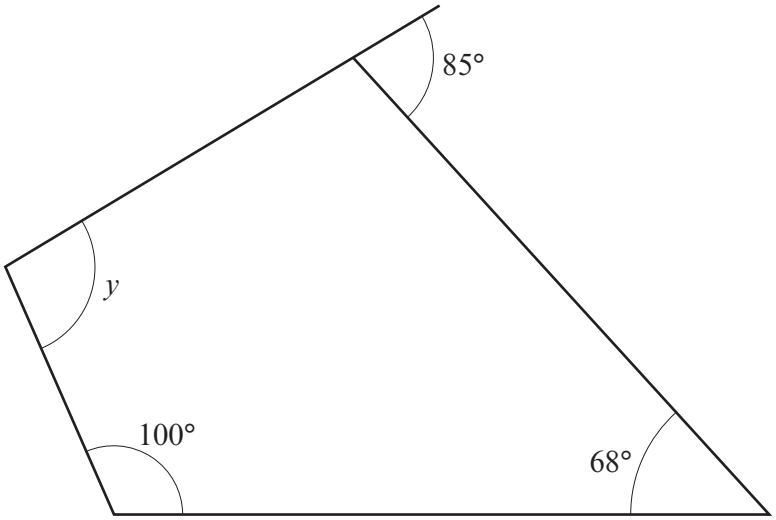


Diagram not drawn to scale

.....

.....

.....

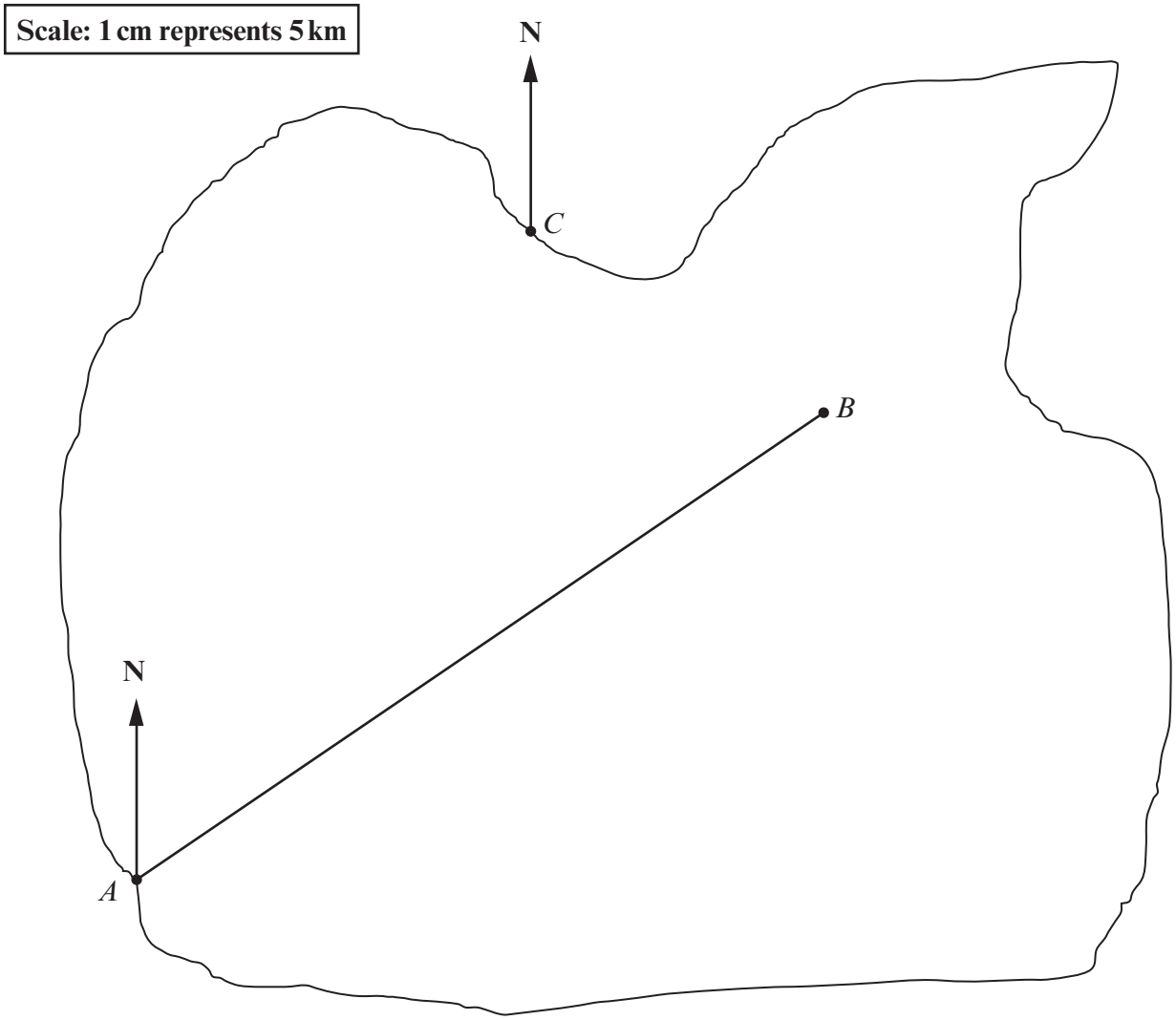
.....

y = ... °

[3]

Examiner only

12.



(a) The diagram represents a map drawn to a scale of 1 cm to represent 5 km.
Measure the length of AB and calculate the distance AB in kilometres.

AB = ... cm

.....

.....

AB = ... km
[3]

(b) The point D is at a distance of 45 km from the point C on a bearing of 136°.
Plot the point D on the above map.

.....

.....
[2]

Examiner only

13. For each of the following statements, circle whether it is true or false, and give a full explanation for your choice.

(a) If you halve a whole number ending in a 6 you will always get a number ending in a 3.

true / false

.....

.....

[2]

(b) All whole numbers ending in 3 are prime numbers.

true / false

.....

.....

[2]

Examiner only

14. Tomas has one spin of the circular spinner shown below.
Two of the lines shown on the diagram are diameters of the circle.

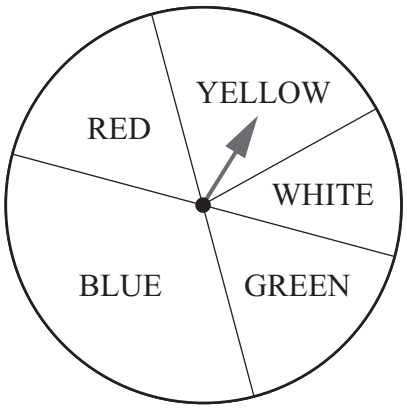


Diagram not drawn to scale

(a) The table below shows the probabilities of Tomas obtaining YELLOW, WHITE and GREEN with one spin of the spinner.
Complete the table.

Colour	YELLOW	WHITE	GREEN	RED	BLUE
Probability	0·2	0·12	0·18		

.....

.....

[3]

(b) Find the probability of obtaining either WHITE or GREEN on the spinner.

.....

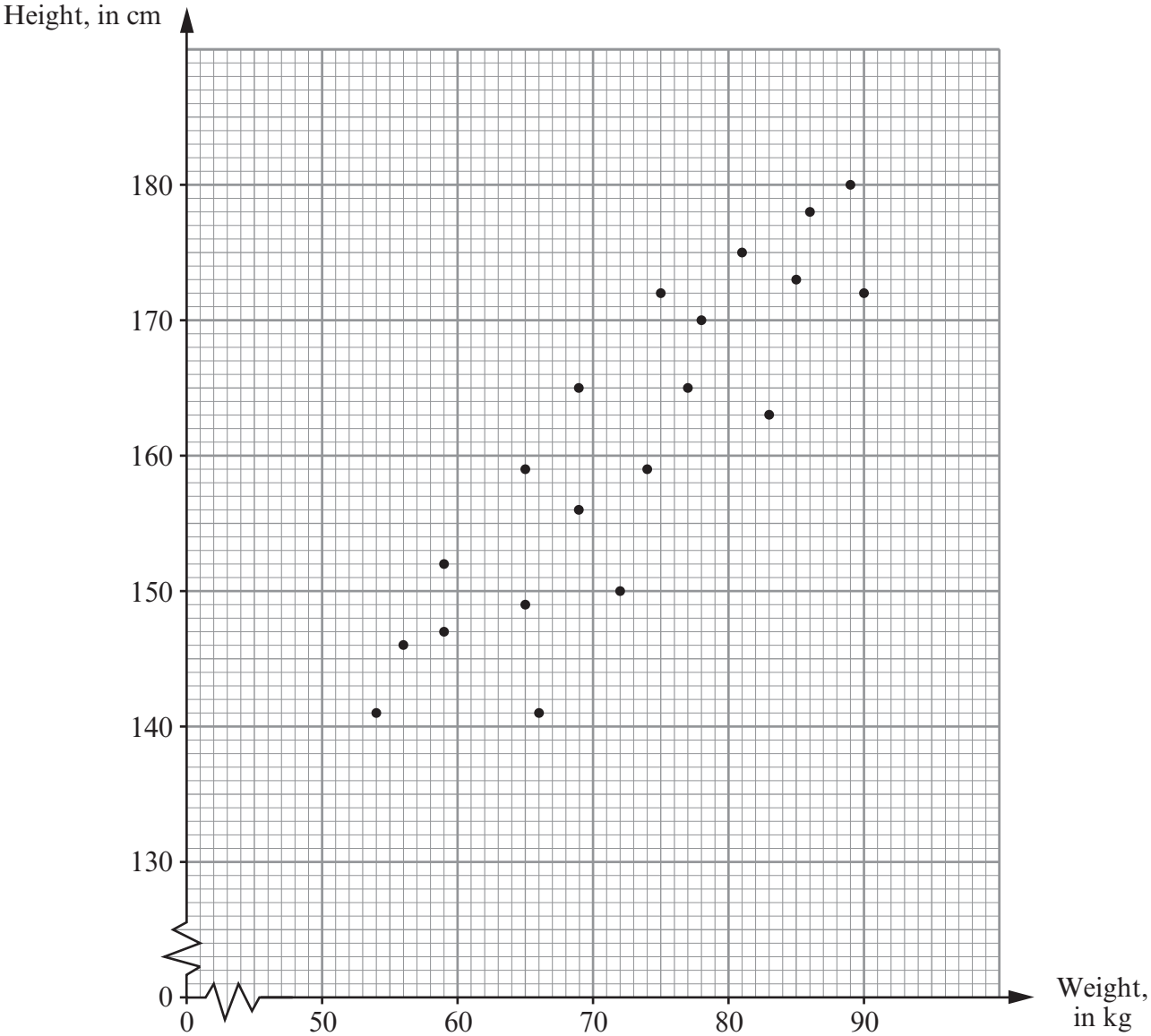
.....

.....

[2]

Examiner only

15. The scatter diagram shows the height, in cm, and the weight, in kg, for each of 20 members of a sports club.



(a) Write down the height and weight of the **heaviest** of the 20 members of the sports club.

Weight ..... kg

Height ..... cm
[2]

(b) Write down the type of correlation shown by the scatter diagram.

.....
[1]

(c) Draw, by eye, a line of best fit on the scatter diagram.
[1]

(d) Estimate the weight of a person of height 155 cm.

.....
[1]

Examiner only

(e) Is it possible to estimate the weight of a person with a height of 210 cm from the scatter diagram?
You must give a reason for your answer.

.....

.....

.....

.....

[1]

16. *(a)* Cheryl scored 60 marks out of 80 in a test.
Express Cheryl's score as a percentage.

.....

.....

.....

[2]

(b) Share £300 in the ratio 5 : 7.

.....

.....

.....

.....

[3]

(c) Calculate 75% of £562.80.

.....

.....

.....

.....

.....

.....

[2]

Examiner only

17. *(a)* Write down the nth term of the sequence 6, 10, 14, 18, 22, ...

.....

.....

.....

[2]

(b) Solve $3x + 4 = 8 - 7x$.

.....

.....

.....

.....

.....

[2]

18. *(a)* Explain how you know that 24 is **not** a square number.

.....

.....

.....

.....

[1]

(b) Express 112 as a product of prime numbers in index form.

.....

.....

.....

.....

.....

.....

.....

.....

.....

[3]