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Rewarding Learning

Centre Number

71

Candidate Number

General Certificate of Secondary Education
January 2015

Mathematics

Unit T1
(With calculator)
Foundation Tier

[GMT11]

FRIDAY 9 JANUARY, 9.15am–10.45am

MV18

TIME

1 hour 30 minutes, plus your additional time allowance.

INSTRUCTIONS TO CANDIDATES

Write your Centre Number and Candidate Number in the spaces provided at the top of this page.
You must answer the questions in the spaces provided.
Complete in blue or black ink only.
Answer **all twenty-eight** questions.
Any working should be clearly shown in the spaces provided since marks may be awarded for partially correct solutions.
You **may** use a calculator for this paper.

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INFORMATION FOR CANDIDATES

The total mark for this paper is 100.
Figures in brackets printed at the end of each question indicate the marks awarded to each question or part question.
Functional Elements will be assessed in this paper.
Quality of written communication will be assessed in **Questions 12(b) and 26**.
You should have a calculator, ruler, compasses and a protractor.
The Formula Sheet is on page 3.

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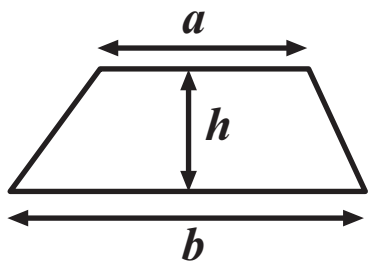
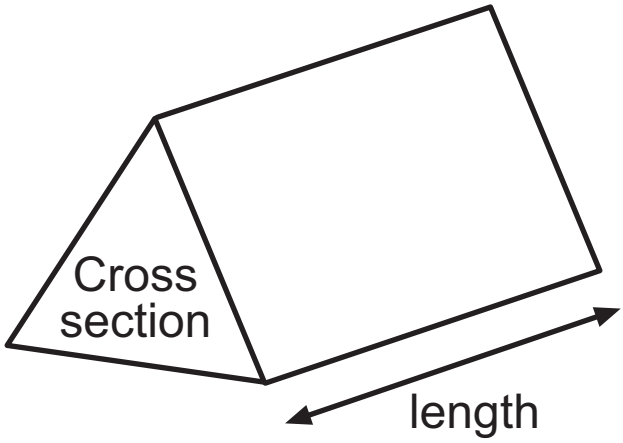
Formula Sheet

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



Volume of prism = area of cross section × length



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1

13	47	16	80	77
78	8	63	37	49

(a) From the numbers in the squares above, write down

(i) two numbers with a total of 50, [1 mark]

Answer _____ , _____

(ii) two numbers with a difference of 30, [1 mark]

Answer _____ , _____

(iii) a multiple of 9, [1 mark]

Answer _____

(iv) a cube number. [1 mark]

Answer _____

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(b) What is the largest number you can get by multiplying any two numbers in the squares? [2 marks]

Answer _____

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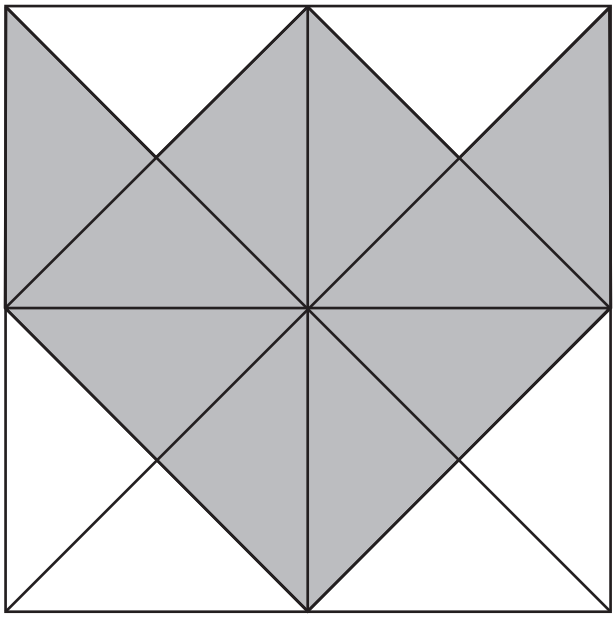
2 **(a)**



What fraction of the diagram is shaded?

Give your answer in its **simplest form**. [2 marks]

Answer _____

(b) Write 5672 to the nearest 100 [1 mark]

Answer _____

(c) Write down in figures the number forty-nine thousand and twenty-five. [1 mark]

Answer _____

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3 **(a)** One cake costs **£**7.99
How many cakes can Sandra buy with **£**60? [2 marks]

Answer _____

(b) Betty buys 9 of these cakes.
How much change does she get from **£**80? [2 marks]

Answer **£** _____

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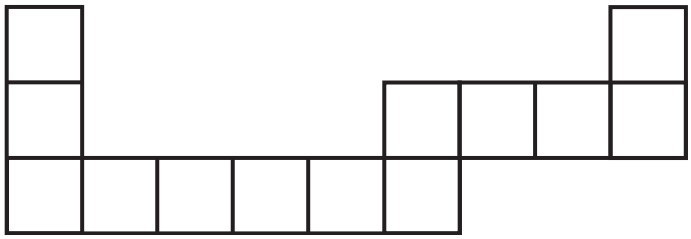
4 **(a)** **(i)** Draw a quadrilateral in which two sides are parallel and are not the same length. [1 mark]

(ii) What is the special name for this quadrilateral? [1 mark]

Answer _____

(b) The shape below is made up of squares of side 1cm.

Work out the perimeter of the shape. [1 mark]



Answer _____ cm

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5 Complete the four statements below by writing in the **metric** units. [4 marks]

(a) A can of cola contains 330 _____

(b) A jar of coffee beans weighs 300 _____

(c) The width of a TV screen is 120 _____

(d) The distance from Belfast to Sligo is 200 _____

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6 **(a)** Using the point O as centre, draw a circle with a diameter of 9 cm. [1 mark]

• O

(b) Mark clearly a point X anywhere on the circumference of your circle.

Draw a straight line from O to X. [1 mark]

(c) By what name is the line OX known? [1 mark]

Answer _____

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7 The marks in a vocabulary test are shown below.

4	9	3	6	5
2	7	7	4	3
9	1	6	5	7

(a) Find the median of the marks. [2 marks]

Answer _____

(b) Find the range of the marks. [1 mark]

Answer _____

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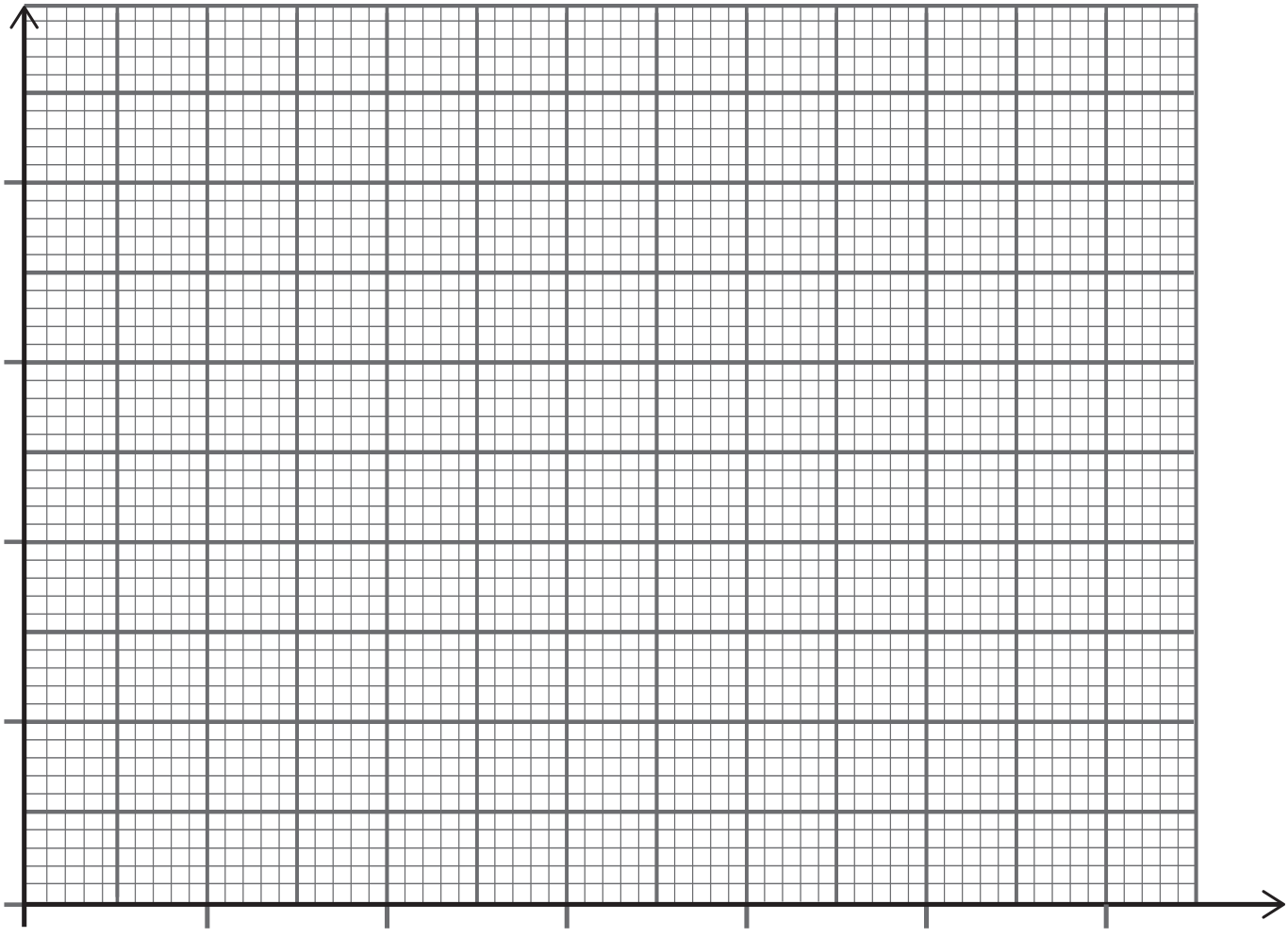
8 The number of letters delivered to houses in a street one morning are shown.

Number of letters	Number of houses
0	4
1	6
2	7
3	5
4	3
5	5

On the grid below draw a frequency diagram for this information. [3 marks]



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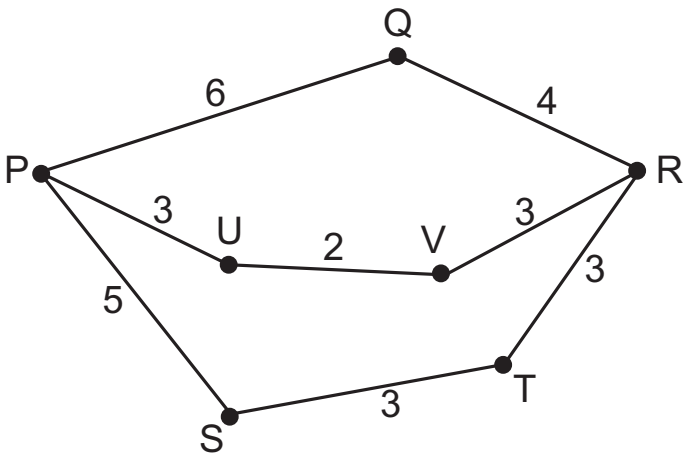
9 Seven towns are connected by road as shown.
All distances are in miles.



The mileage table shows the **shortest** distance between towns.

P						
6	Q					
8	4	R				
5	10	6	S			
8		3	3	T		
3	9	5	8		U	
5	7	3	9	6	2	V

(a) Complete the mileage table. [2 marks]

(b) Find the length of the **shortest** journey from V to P which **does not** pass through U. [2 marks]

Answer _____ miles

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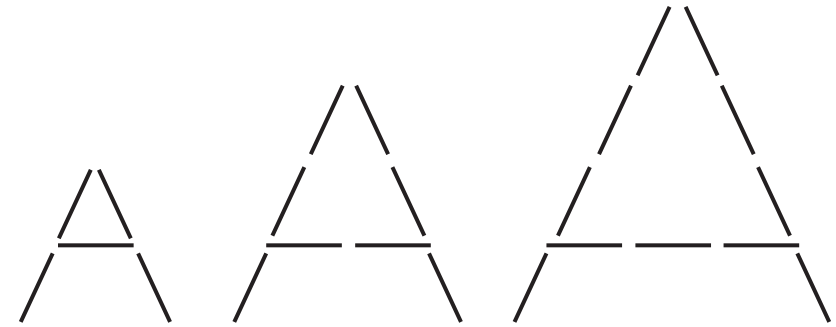
10 The 'A' shapes drawn below are made with matches.



Shape 1 Shape 2 Shape 3 Shape 4

(a) Draw Shape 4. [1 mark]

(b) Complete the table for Shapes 4 and 5. [1 mark]

Shape Number	1	2	3	4	5
Number of Matches	5	8	11		

(c) What pattern do you notice in the 'Number of Matches' row? [1 mark]

Answer _____

(d) Find the number of matches in Shape 9. [2 marks]

Answer _____

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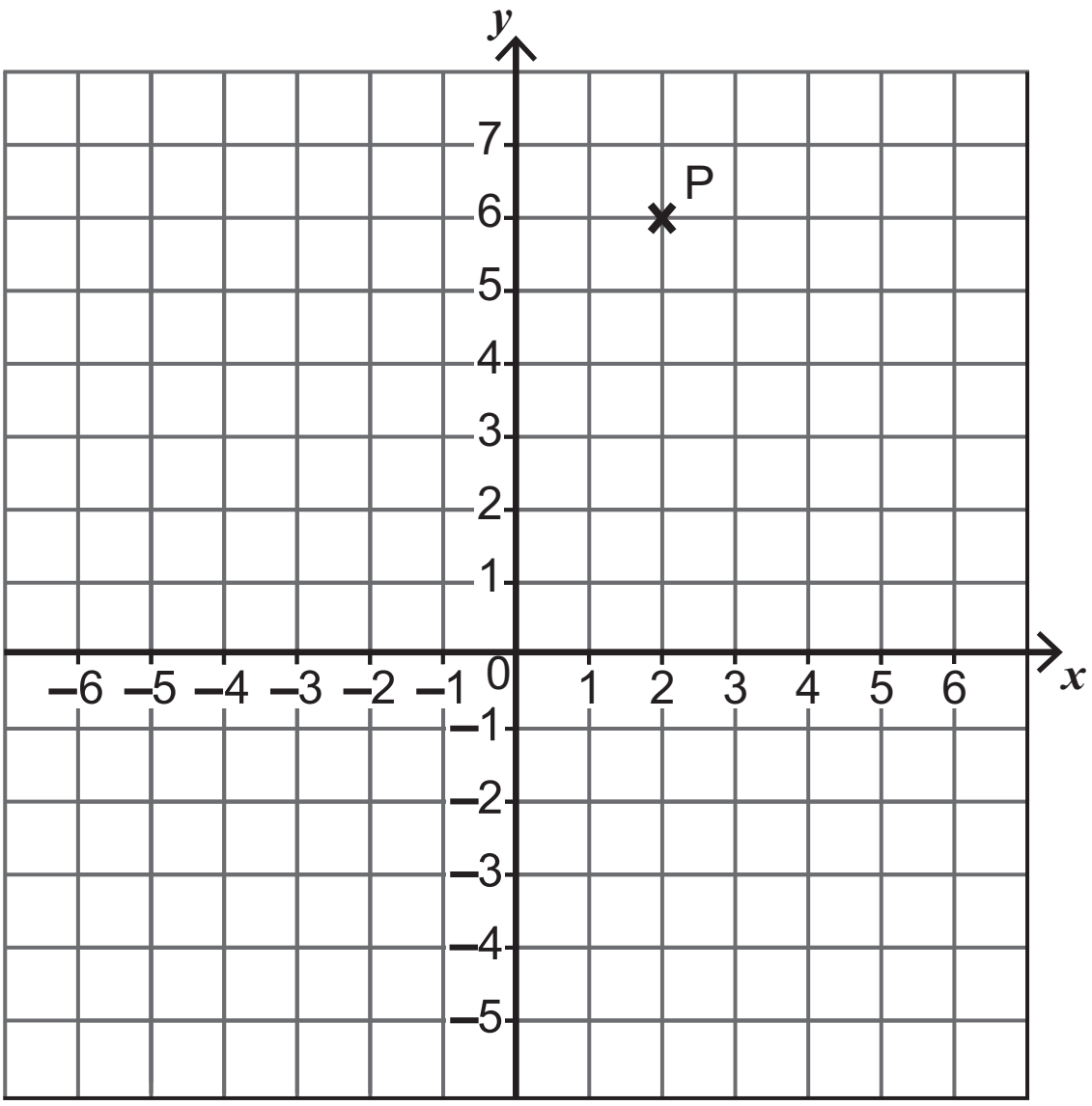
11



(a) Write down the coordinates of the point P. [1 mark]

Answer (_____ , _____)

(b) Plot and label the points Q (–1, –3) and R (2, –3). [2 marks]

(c) Join up P, Q and R to form a triangle.

What type of triangle is PQR? [1 mark]

Answer _____

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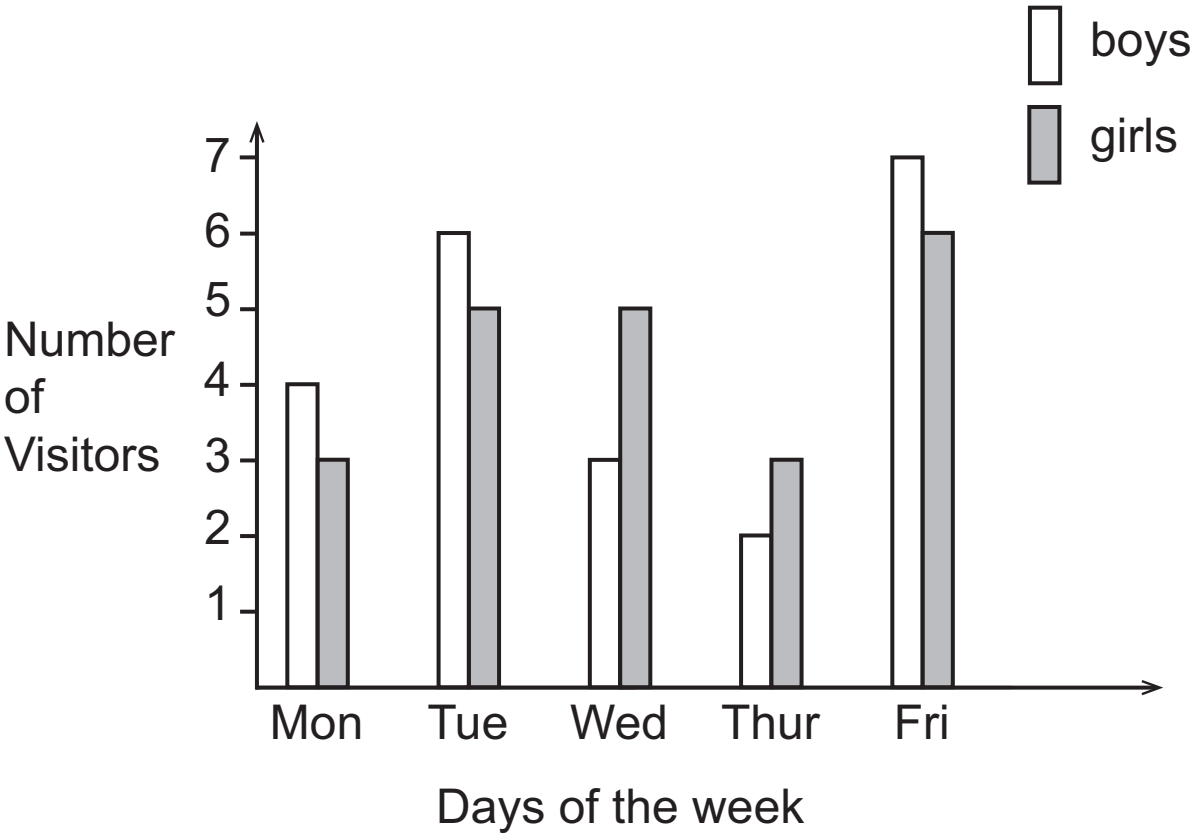
12 The chart below shows the numbers of boys and girls who visited a library during one school week.



(a) Which day did most boys and girls visit the library? [1 mark]

Answer _____

Quality of written communication will be assessed in this question.

(b) The librarian stated that 'more boys than girls visited the library during the week'. Was she correct? Give a reason for your answer. [3 marks]

Answer _____ because _____

_____

_____

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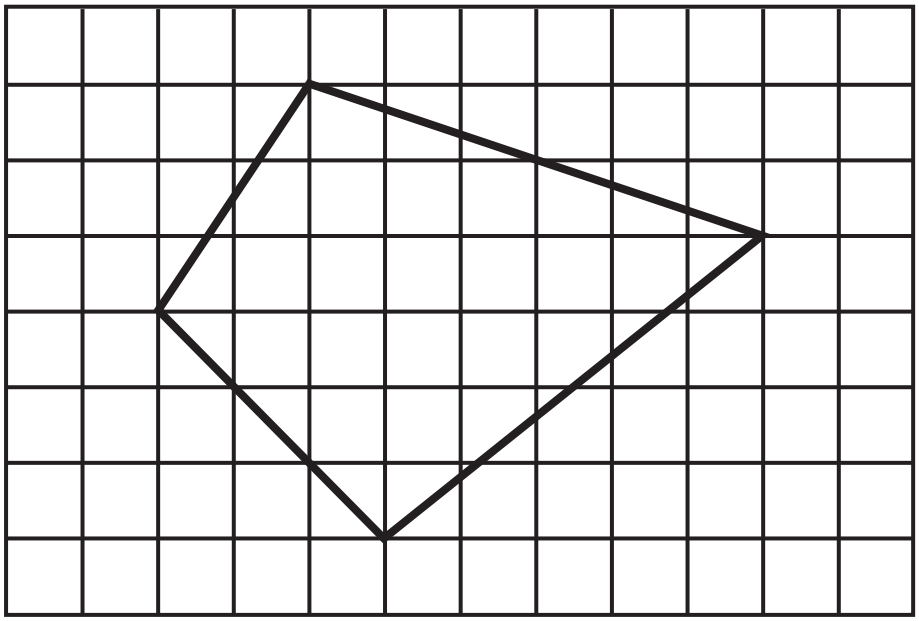
13 The quadrilateral below is drawn on centimetre square paper.



Estimate the area of the quadrilateral. [2 marks]

Answer _____

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14 Work out the size of the angle marked m in the diagram below. [1 mark]

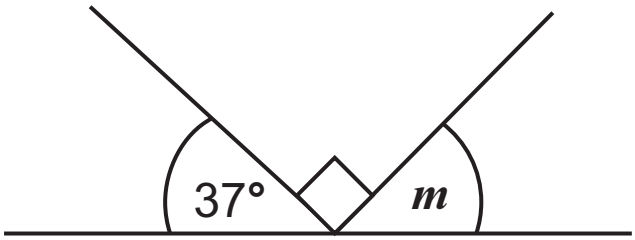

diagram not drawn accurately

Answer m = _____ °

15 Find the area of this triangle. [3 marks]

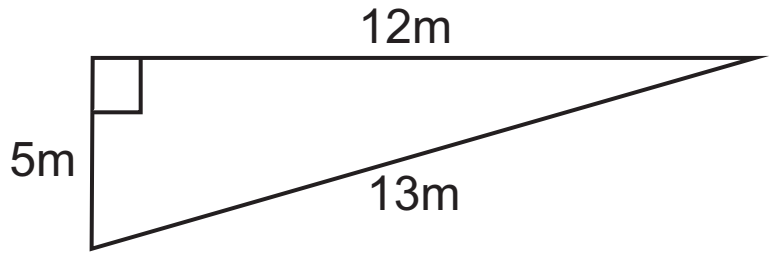

diagram not drawn accurately

Answer _____ m^2

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16 (a) Find $\sqrt{7.84}$ [1 mark]

Answer _____

(b) Write these three numbers in order starting with the smallest. [1 mark]

0.597 0.64 0.5892

Answer _____ , _____ , _____

(c) Write down the next two prime numbers after 53 [2 marks]

Answer _____ , _____

(d) Find the cube root of 27 [1 mark]

Answer _____

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17 There are 7000 paper clips to be packed into boxes.
Each box contains 93 paper clips when full.
As many boxes as possible are completely filled.

(a) How many boxes are completely filled? [2 marks]

Answer _____

(b) How many paper clips are left over? [1 mark]

Answer _____

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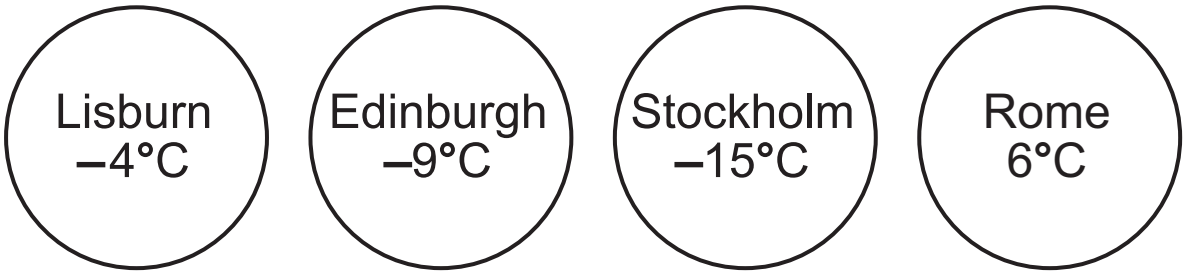
18 The circles below show the lowest temperatures in four cities on a winter's night.



(a) Write down the difference in temperature between

(i) Rome and Edinburgh, [1 mark]

Answer _____ °C

(ii) Lisburn and Stockholm. [1 mark]

Answer _____ °C

(b) The next day all these temperatures rose by 8°C.

Write down the temperature for the next day in

(i) Lisburn, [1 mark]

Answer _____ °C

(ii) Stockholm. [1 mark]

Answer _____ °C

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19 Ben's annual salary is **£**22 000. He spends 15**%** of this on rent.

How much is his rent **per month**? [3 marks]

Answer **£** _____

20 Calculate the mean of these numbers. [3 marks]

46 35 22 44 19 38 47 26 19 30

Answer _____

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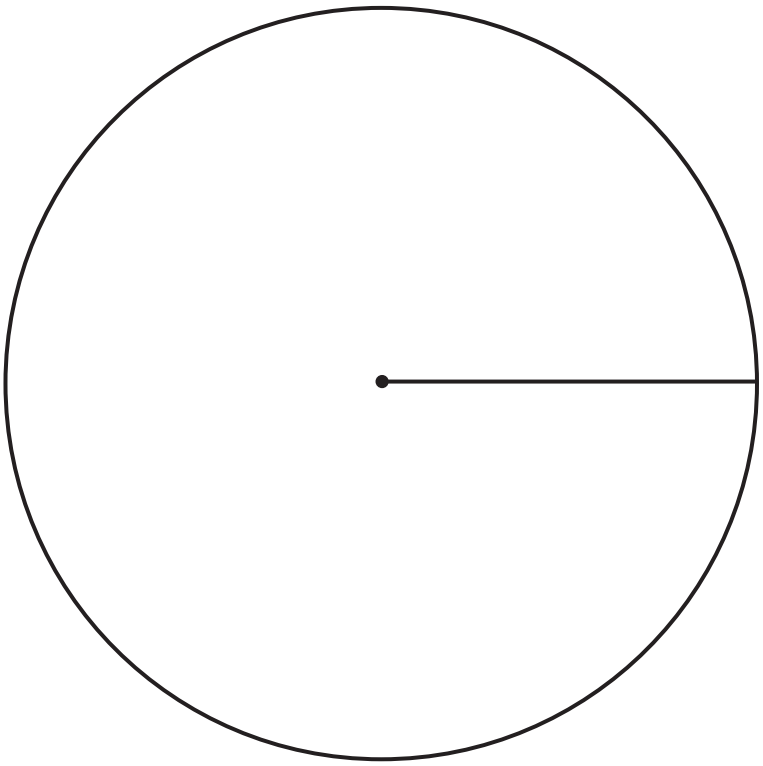
21 The table below gives information on the sports played by boys after school.

Sport	Football	Rugby	Hockey	Tennis
Number of boys	26	8	12	14
Angle				

Draw a clearly labelled pie chart for this information.
[4 marks]



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22 27 girls did a test.
The stem and leaf diagram shows their marks.

0	1	3	4			
1	4	4	5	6		
2	0	1	3	5	7	7
3	2	4	4	6	6	6
4	4	5	8	9		
5	0	0	3	5		

Key 1 | 4 means 14 marks

Find

(a) the mode of the marks, [1 mark]

Answer _____

(b) the median of the marks, [1 mark]

Answer _____

(c) the range of the marks. [1 mark]

Answer _____

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23 A fish tank is a cuboid.
The tank has a length of 9 metres, a width of 4 metres and a height of 3 metres.

(a) What is the maximum volume of water which the fish tank can hold? [2 marks]

Answer _____ m^3

(b) The fish tank is filled with 99 m^3 of water.
What is the depth of water in the tank? [2 marks]

Answer _____ metres

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24 The Eurostar train leaves London at 11 24 (London time) and arrives in Paris at 14 47 (Paris time).

The time in Paris is 1 hour ahead of the time in London.
How long does the journey take? [3 marks]

Answer _____

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25 Work out the size of the angle w. [3 marks]

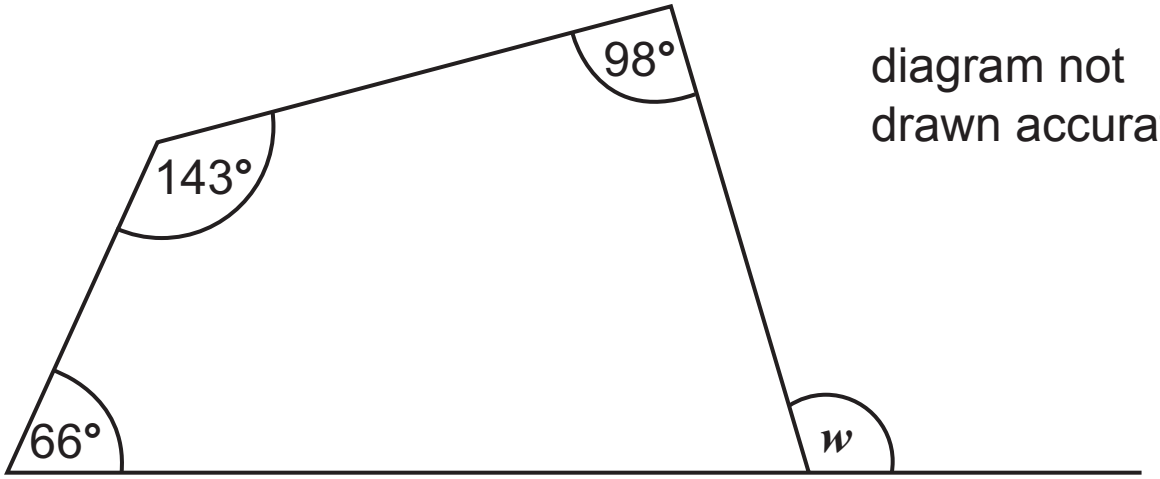

diagram not drawn accurately

Answer w = _____ °

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Quality of written communication will be assessed in this question.

26 A smartphone costs **£**375

Jill pays a deposit of **£**95 for this smartphone.

She then pays **£**35 each month.

How many months will it take before she has paid for the smartphone?

Show your working clearly. [3 marks]

Answer _____ months

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27 **(a)** Sam says '17 is a bigger number than 12 so it will have more factors'.
Is he right? Give a reason for your answer. [3 marks]

Answer _____ because _____

_____

(b) Calculate $4.2^2 + \sqrt{3.61}$ [2 marks]

Answer _____

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28 (a) Simplify $4x - 7y + 2y + 4x$ [2 marks]

Answer _____

(b) Solve $7x - 9 = 47$ [2 marks]

Answer $x =$ _____

THIS IS THE END OF THE QUESTION PAPER

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For Examiner's use only	
Question Number	**Marks**
1	
2	
3	
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27	
28	
Total Marks	

Examiner Number

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