



General Certificate of Secondary Education
2016

Centre Number

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Candidate Number

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Mathematics

Unit T1
(With calculator)
Foundation Tier



MV18

[GMT11]

THURSDAY 26 MAY, 9.15am–10.45am

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-five** 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.

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

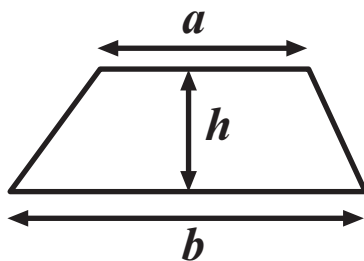
Questions 3 and 14.

You should have a calculator, ruler, compasses and a protractor.

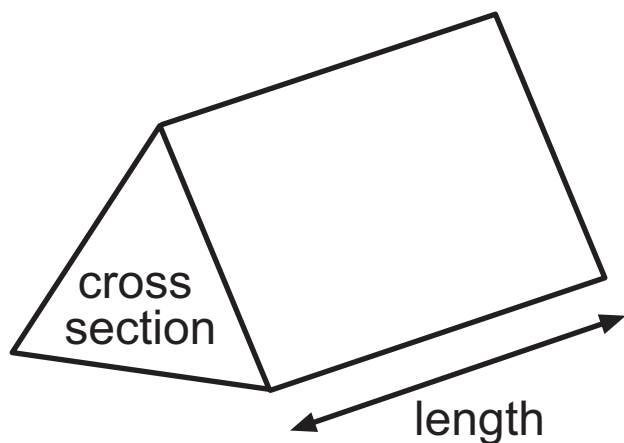
The Formula Sheet is on page 3.

Formula Sheet

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



Volume of prism = area of cross section \times length



- 1 (a) What does the digit 7 in the number 387641 represent?
[1 mark]

Answer _____

- (b) Calculate without using a calculator.

Show your working.

- (i) $785 - 392$ [1 mark]

Answer _____

- (ii) $5.36 + 2.95$ [1 mark]

Answer _____

(c) Add 3.67 and $\frac{3}{10}$ [1 mark]

Answer _____

(d) Write down the largest number from

0.09 0.8 0.10 [1 mark]

Answer _____

(e) Calculate 20% of £45 [1 mark]

Answer £ _____

2 Place a tick in the correct box.

TRUE

FALSE

(a) 4 is a factor of 2

☐☐

[1 mark]

(b) 6 is the denominator in
the fraction $\frac{5}{6}$

☐☐

[1 mark]

(c) 16 is the square root of 4

☐☐

[1 mark]

Quality of written communication will be assessed in this question.

3 Cans of juice cost 25p each to produce.

There are 6 cans in a pack.

12 packs are sold at £3.60 each.

What is the profit? [3 marks]

Answer £ _____

4 For each sequence below, write the next number in the box.

(a) 2, 7, 12, 17, [1 mark]

(b) 1, 3, 4, 7, 11, [1 mark]

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(Questions continue overleaf)

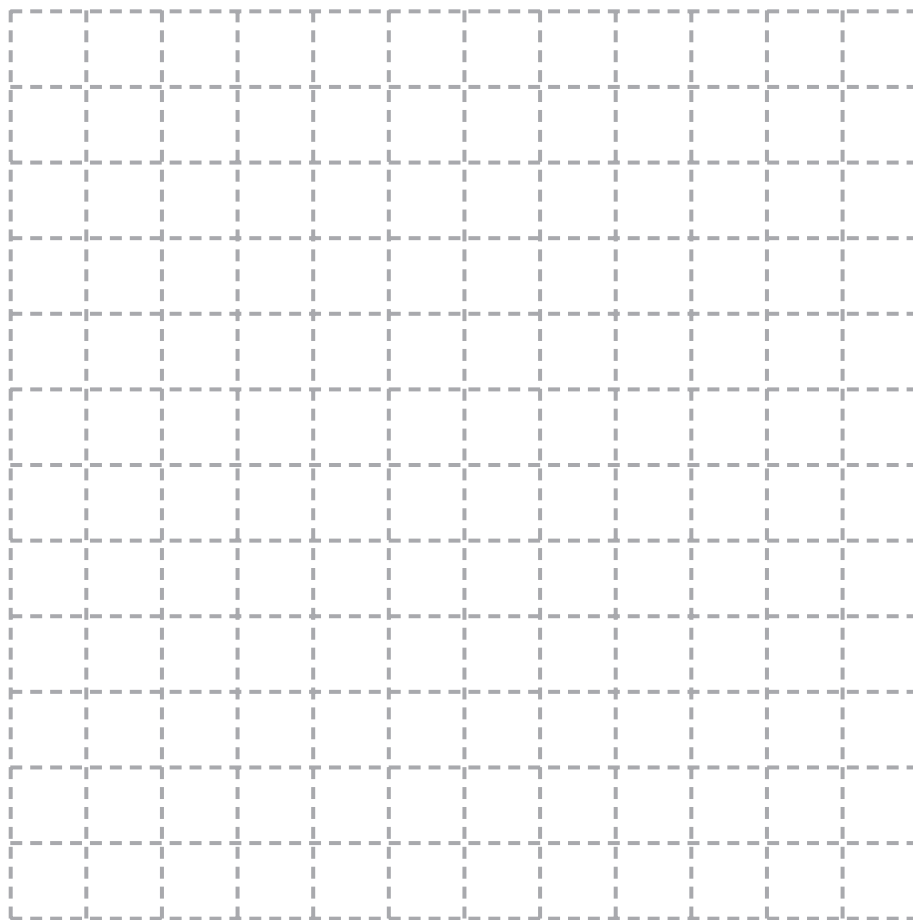
- 5** Some boys were asked which sport they play. The results are in the table below.

Sport	Frequency
Tennis	3
Basketball	6
Rugby	7
Football	8
Golf	2
Hockey	4

(a) Which is the most popular sport? [1 mark]

Answer _____

- (b) Draw a clearly labelled bar chart on the grid below.
[3 marks]



- (c) Thirty-two boys were asked. When one of the boys saw the table he said that two of the boys must have been absent.

Give a reason why this statement may **not** be true.
[1 mark]

6 For these numbers

3 11 9 10 14 2 5 3 3 7 8 10 2

(a) find the mode, [1 mark]

Answer _____

(b) find the median. [2 marks]

Answer _____

- 7 The distance chart below shows distances in km between five towns A, B, C, D, E.

A				
18	B			
35	26	C		
29	14	10	D	
50	36	19	11	E

- (a) Which town is closest to B? [1 mark]

Answer _____

- (b) Which two towns are the furthest apart? [1 mark]

Answer _____ and _____

- (c) One day Mark left one town and travelled to a second town and then on to a third.

His total journey was 43 km. Which towns did he visit and in which order?

(Give one possible answer) [2 marks]

Answer starting town _____ to _____ and then on to _____

8 Below is a list of steps for drawing a quadrilateral.

Step 1. The base AB is horizontal and is 8 cm long.

Step 2. BC is at right angles to AB and is 4.7 cm long.

Step 3. Angle BAD is 54°

Step 4. DC is parallel to AB.

(a) Follow the steps to draw and label an accurate diagram of the quadrilateral.

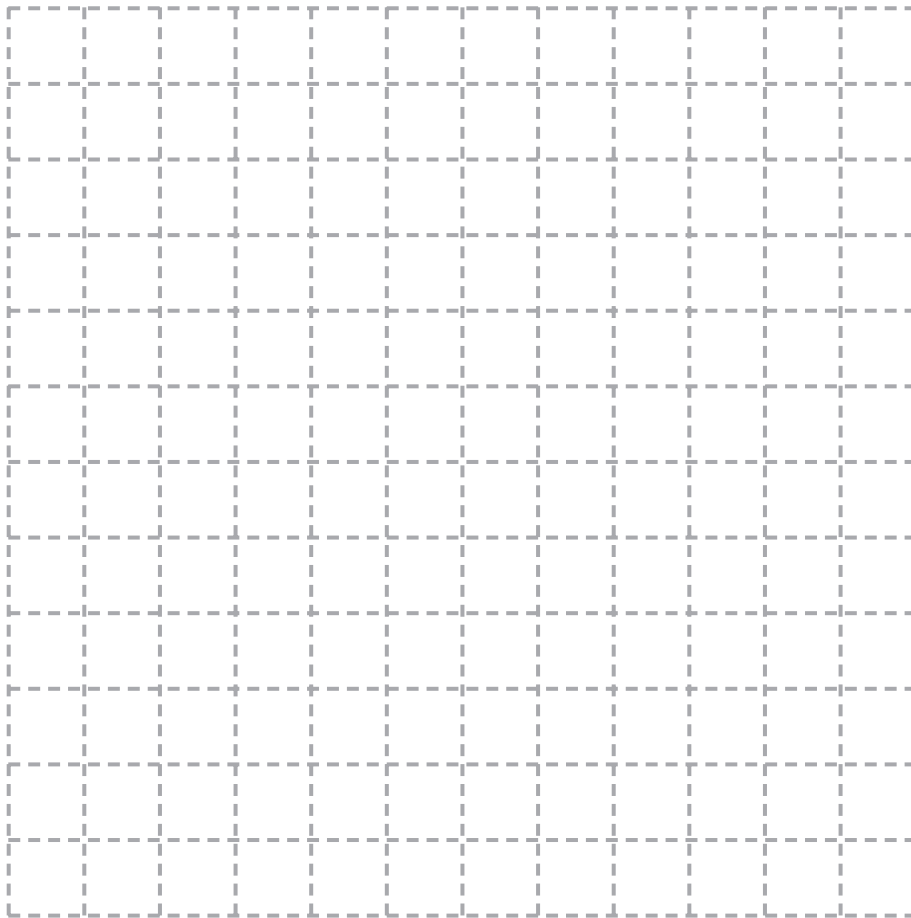
The starting point A has been given. [6 marks]

•
A

(b) What is the mathematical name given to the quadrilateral ABCD? [1 mark]

Answer _____

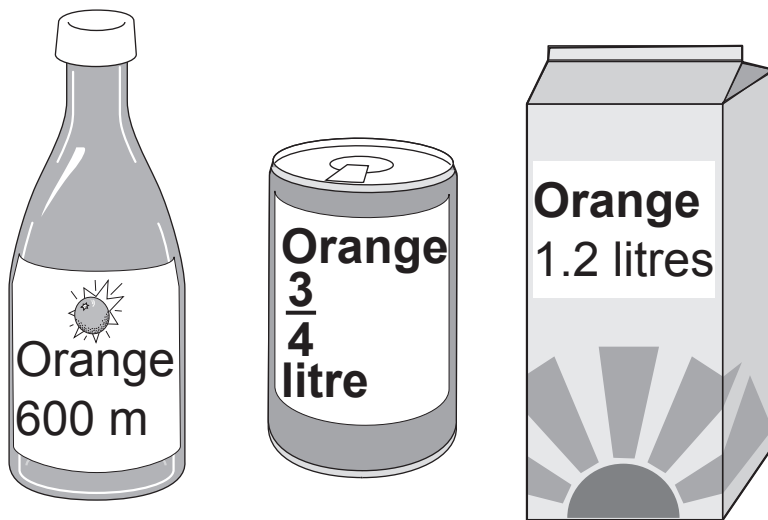
- 9 (a) On the grid below draw a rectangle with an area of 24 cm^2
Each small square is 1 cm^2 [2 marks]



- (b) Lisa drew a rectangle with an area of 24 cm^2 and a perimeter of 22 cm . What are the dimensions of Lisa's rectangle? [1 mark]

Answer length = _____ cm; breadth = _____ cm

10 Martha has three different containers of orange juice.



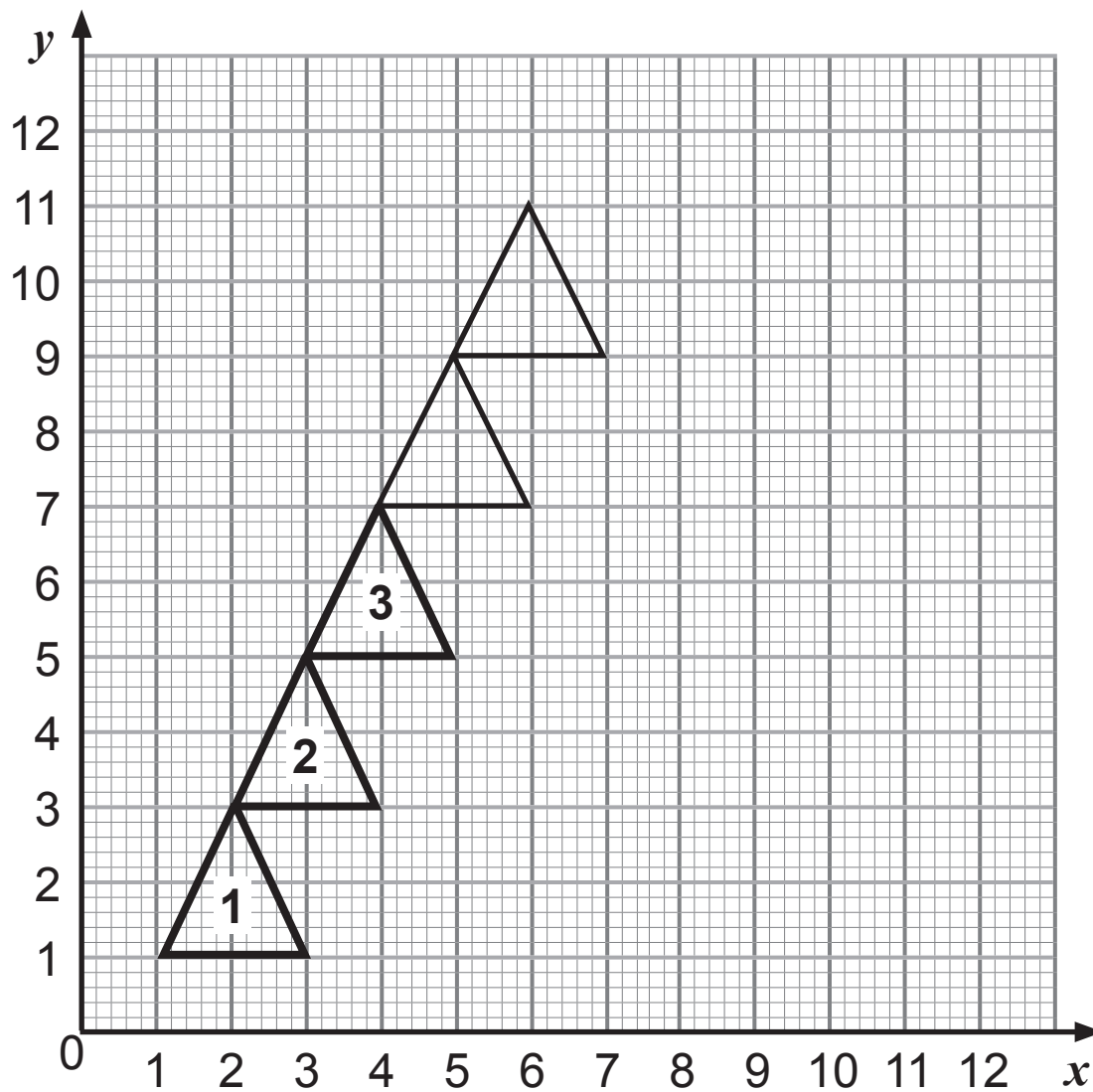
Calculate the **total** amount of orange juice in the three containers. [3 marks]

Answer _____

11 Complete the table below. The first line has been done for you. [6 marks]

I start facing	I turn	Fraction of turn	Degrees turned	I am now facing
North	clockwise	$\frac{3}{4}$	270°	West
East	anticlockwise		90°	
North West			135°	East
	clockwise	$\frac{7}{8}$		South

- 12** Triangles are drawn on a grid to form a pattern. Here are the first three triangles.



- (a) Write down the coordinates of the bottom right corner of triangle 2 [1 mark]

Answer (_____, _____)

The pattern of triangles is continued.

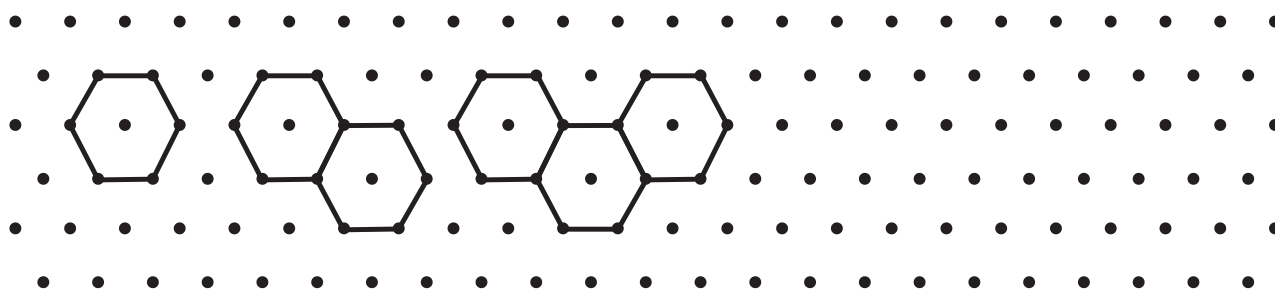
- (b) Write down the coordinates of the bottom right corner of triangle 5 [1 mark]

Answer (_____, _____)

- (c) Write down the coordinates of the top corner of triangle 5 [1 mark]

Answer (_____, _____)

13 Regular hexagons of side length 1 cm are placed to form a pattern.



pattern 1

pattern 2

pattern 3

pattern 4

(a) Draw pattern 4 [1 mark]

(b) Complete the following table. [2 marks]

pattern number	1	2	3	4
perimeter of shape (cm)	6	10		

(c) Describe how the perimeter of the shape changes as each new hexagon is added. [1 mark]

(d) What is the perimeter of pattern 9? [2 marks]

Answer _____ cm

Quality of written communication will be assessed in this question.

14 To divide any number by 28 you can first divide by 7 and then by 4

Use this idea to divide 504 by 56

Do not use a calculator.

Show all your working. [2 marks]

Answer _____

15 Green Dale Guest House

Adult holiday prices as shown.

Children (under 12) pay only 40% of Adult price.

Dates between	7 Nights	14 Nights
1st Jan–31st March	£315	£595
1st April–30th June	£485	£770

- (a) Sarah, Tom and their two children, Becky (aged 11) and Sam (aged 7) stay in Green Dale for 14 nights in June.

What is the total cost for their holiday? [4 marks]

Answer £ _____

- (b) Tanya books online and receives a 5% discount.

She goes on holiday for 7 nights in February with her son Ben (aged 14) and daughter Jade (aged 10).

What is the total cost of their holiday? [5 marks]

Answer £ _____

16 For these numbers

48 53 37 26 39 51 42 43 40 24

(a) calculate the mean, [3 marks]

Answer _____

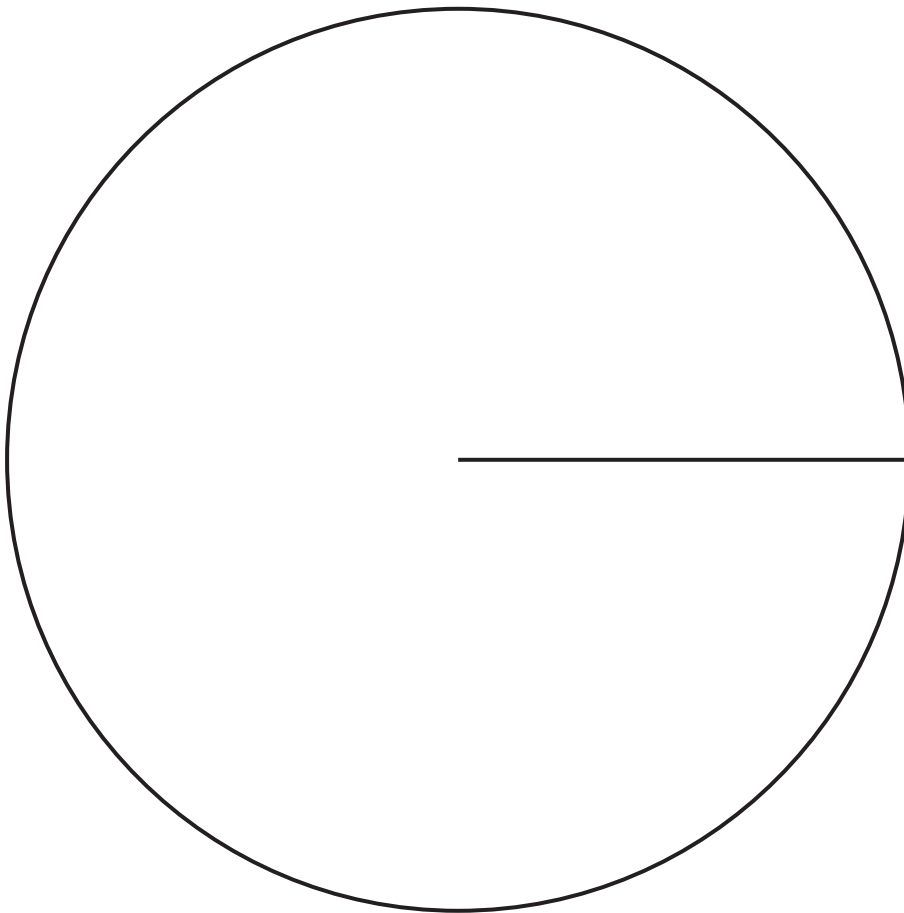
(b) calculate the range for the **largest** 5 numbers.
[2 marks]

Answer _____

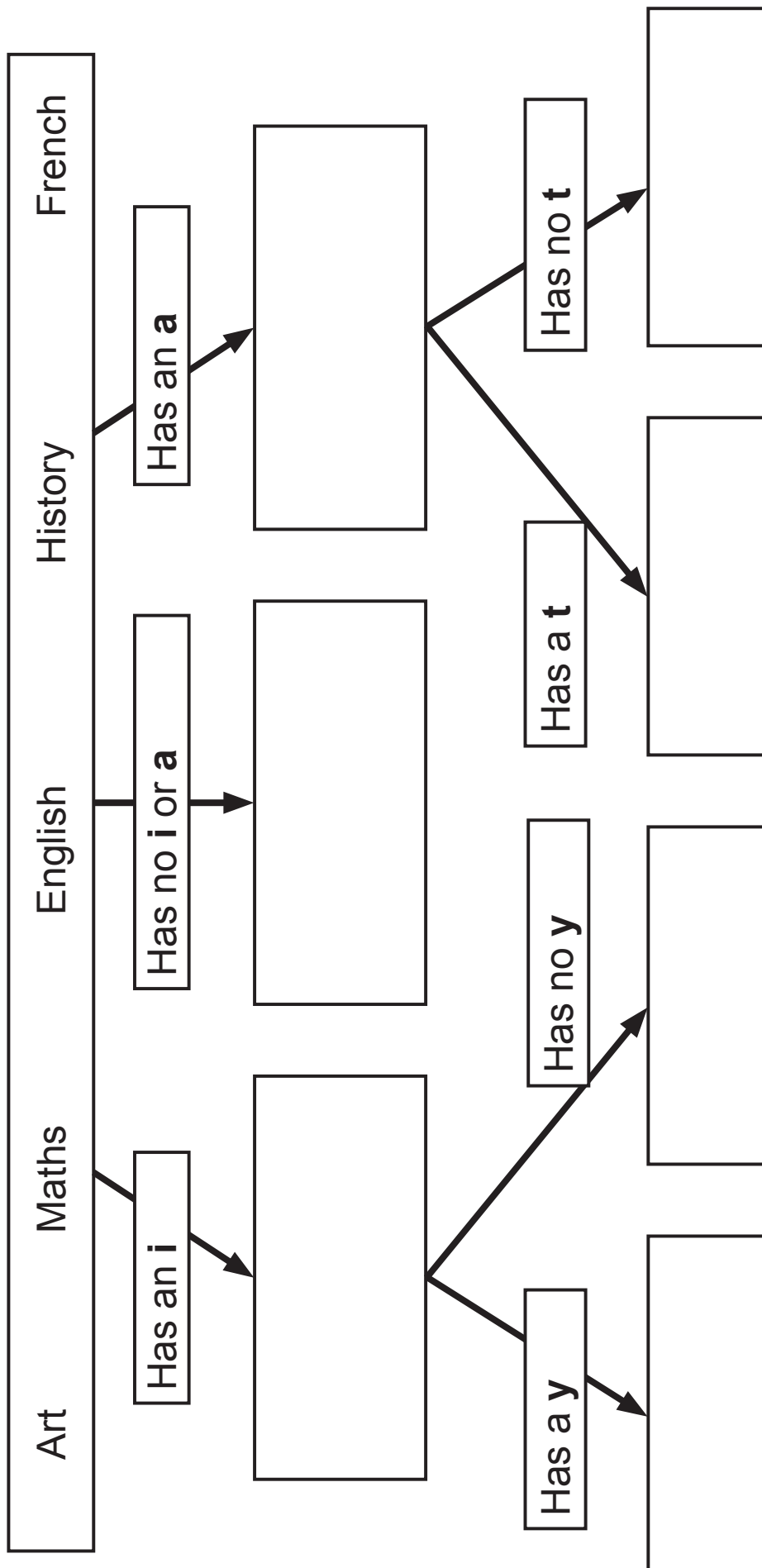
17 The number of dogs in an animal shelter was recorded.

Breed of dog	Frequency	Angle
Terrier	12	
Collie	9	
Labrador	14	
Alsatian	5	

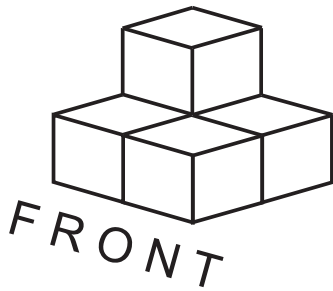
Draw a pie chart to show this information. [4 marks]



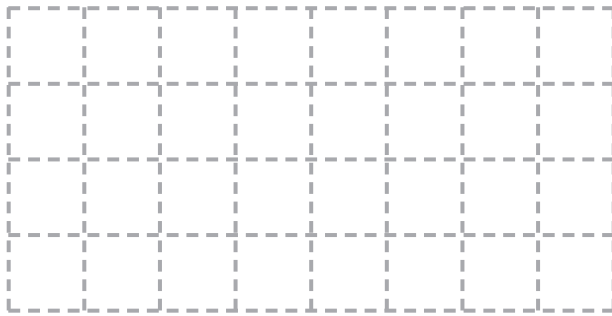
18 Use the decision tree diagram to place all the words in their correct boxes. [2 marks]



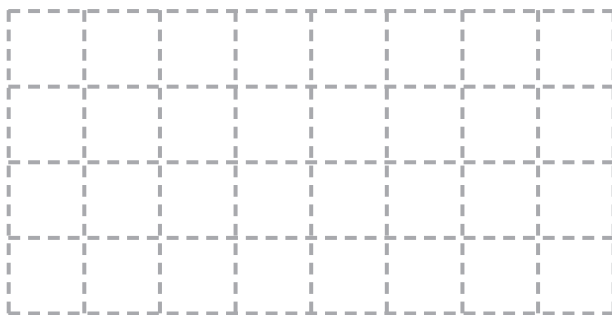
19 The diagram below shows a 3-dimensional shape.



- (a)** On the square grid, draw the plan for the shape.
[1 mark]



- (b)** On the square grid below, draw the front elevation of the shape.
[2 marks]



20

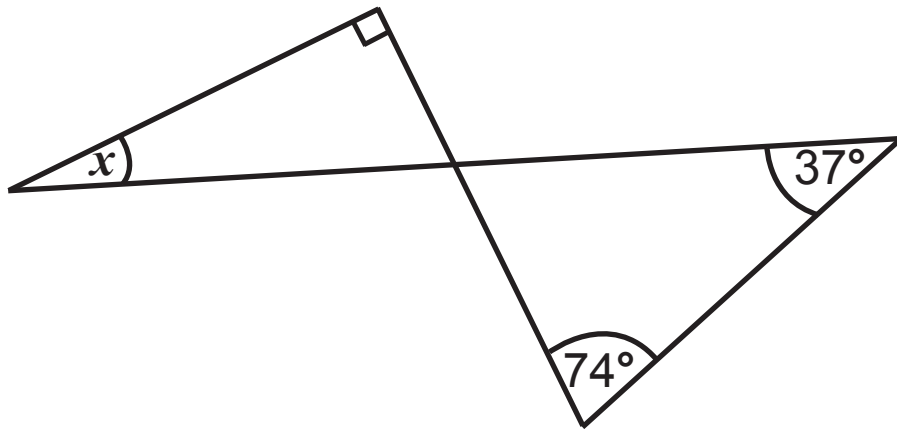


diagram not drawn accurately

Calculate the size of the angle marked x . [3 marks]

Answer _____°

21 (a) Fill in the boxes to complete this sequence. [2 marks]

19, 18, 15, 10, ,

(b) Solve $7 + 2x = 13$ [2 marks]

Answer $x =$ _____

(c) Expand $3(5 - y)$ [2 marks]

Answer _____

(d) Calculate the cube of 11 [1 mark]

Answer _____

(e) Calculate 10^5 [1 mark]

Answer _____

22 In High Grade College there are 800 students.

35% of the students have blond hair.

15% of the students with blond hair wear glasses.

How many students with blond hair wear glasses?
[3 marks]

Answer _____

23 Carrots come in bags with either 7 or 8 carrots in them.
83 carrots are packed into bags.

How many bags have 8 carrots in them? [3 marks]

Answer _____

24 What fraction is halfway between $\frac{1}{4}$ and $\frac{3}{8}$? [2 marks]

Answer _____

25 1st December 2019 falls on a Sunday. What day of the week will 12th March 2020 be? [2 marks]

Answer _____

THIS IS THE END OF THE QUESTION PAPER

For Examiner's use only	
Question Number	Marks
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Total Marks	
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Examiner Number

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