



General Certificate of Secondary Education
January 2019

Centre Number

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Candidate Number

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Mathematics

Unit T5 Paper 1
(Non-calculator)

Foundation Tier



[GMT51]

GMT51

THURSDAY 10 JANUARY, 9.15am–10.15am

TIME

1 hour.

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.

Do not write outside the boxed area on each page, on blank pages or tracing paper.

Complete in black ink only. **Do not write with a gel pen.**

Answer **all seventeen** questions.

All working should be clearly shown in the spaces provided. Marks may be awarded for partially correct solutions.

You **must not** use a calculator for this paper.

INFORMATION FOR CANDIDATES

The total mark for this paper is 50.

Figures in brackets printed down the right-hand side of pages 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 Question 10.

You should have a ruler, compasses and a protractor.

The Formula Sheet is on page 2.

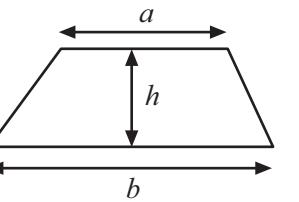
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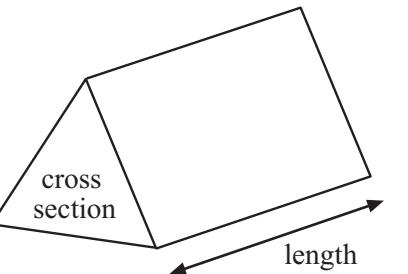
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Formula Sheet

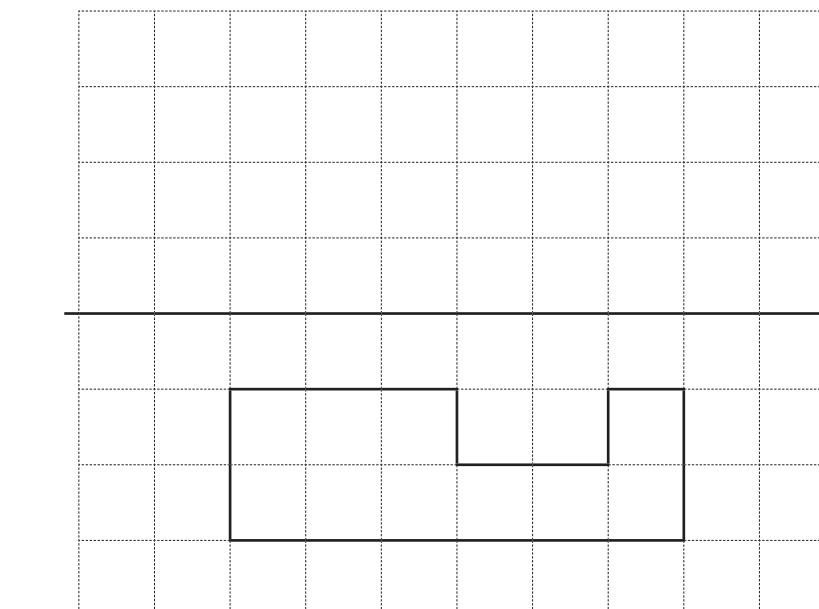
Area of trapezium = $\frac{1}{2} (a + b)h$



Volume of prism = area of cross section \times length



1 Reflect the shape in the mirror line.



Mirror Line

[2]

2 Show your working.

(a) Estimate the cost of 58 pens at 31p each.
State the units of your answer.

Answer _____ [2]

(b) Estimate how many books costing £29 each can be bought for £620

Answer _____ [2]

[Turn over



3 Draw a line from each box to show the unit used to measure each value.

The full amount of petrol in a car

inch

foot

mile

The weight of a lorry

ounce

pound

ton

pint

gallon

The length of a pencil

[3]

4

LOCK REPAIRS

Total bill = Callout charge of £30 + Cost of parts + £45 per hour

(a) Norma had her lock repaired.

The parts cost £23 and the time taken was 1 hour.

What was her total bill?

Answer £ _____ [2]

(b) Simon had his lock repaired.

The time taken was 2 hours and his total bill was £120

How do you know that he did not need any parts?

[2]



5

Impossible	Certain	Evens	Likely	Unlikely
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From the list above choose the word which best describes the probability of

(a) a school pupil being over 2 metres tall,

Answer _____ [1]

(b) a school teacher being under 13 years of age,

Answer _____ [1]

(c) getting an even number when a fair dice is rolled once,

Answer _____ [1]

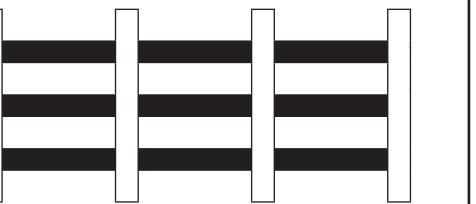
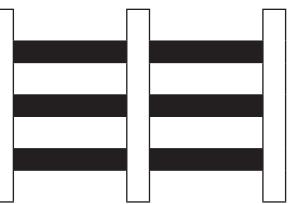
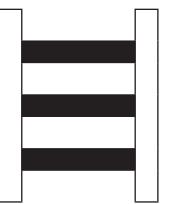
(d) getting a number bigger than 2 when a fair dice is rolled once.

Answer _____ [1]

[Turn over



6



Bob is building a fence.

When he uses P posts, he works out that he will need B bars using the formula

$$B = 3P - 3$$

How many bars will he need for 14 posts?

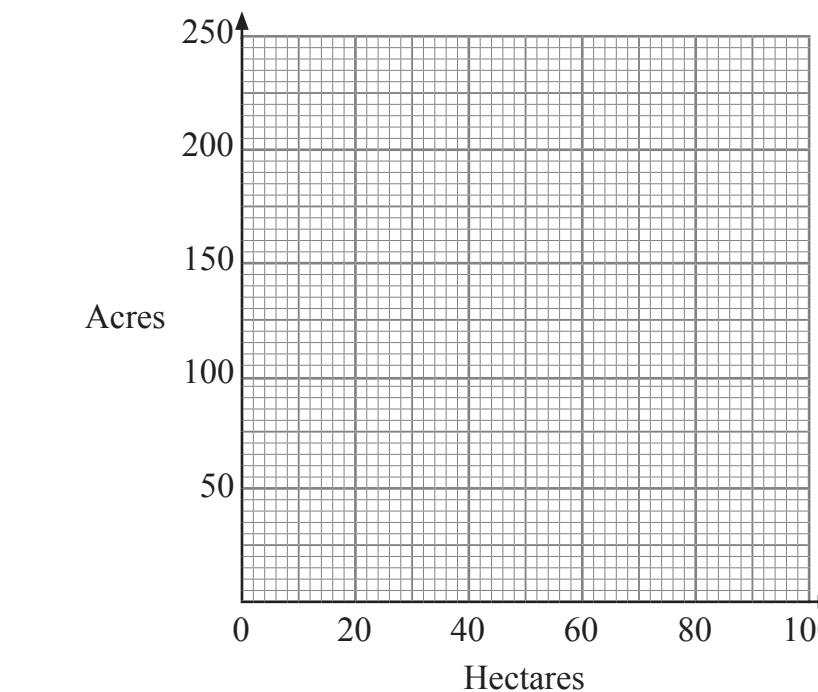
Answer _____ [2]



7 Areas of land are measured in either acres or hectares.

(a) Use the values given in the table to draw a conversion graph.

Hectares	0	20	80
Acres	0	50	200



[2]

(b) Use your graph to convert 230 acres to hectares.

Answer _____ hectares [1]

(c) Convert 200 hectares to acres.

Answer _____ acres [1]

[Turn over]



8 (a) Calculate

(i) $5 + 4 \times 2$

Answer _____ [1]

(ii) $12 - 6 \div 3$

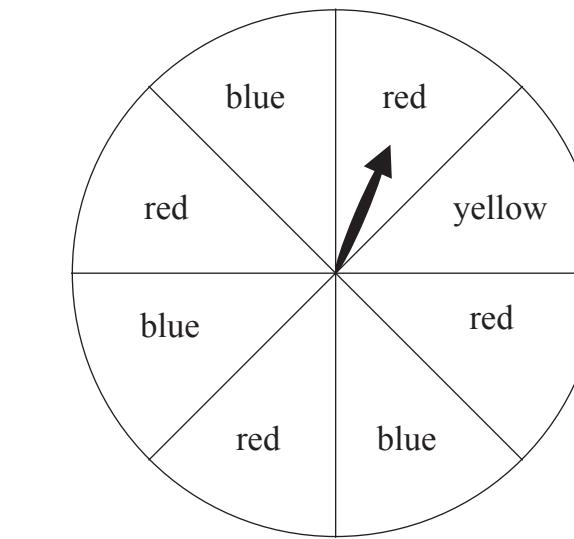
Answer _____ [1]

(b) Round 0.04162 correct to 3 decimal places.

Answer _____ [1]



9 A fair spinner has eight equal parts.



The spinner is spun once.

(a) What is the probability of the spinner landing on yellow?

Answer _____ [1]

(b) Explain how you could change the colour of one part so that the probability of landing on blue is the same as the probability of landing on red.

[1]

(c) Explain how you could change the colour of one part in the original spinner so that it is twice as likely to land on a red as on a blue.

[1]

[Turn over]



Quality of written communication will be assessed in this question.

10 n is a positive integer.

Explain clearly why $4n - 3$ is always odd.

[2]

11 An ostrich can run at 40 mph.

What is this speed in km/h?



Answer _____ km/h [2]



12 There are blue, green and orange marbles in a bag.



Some have already fallen out.

There are now 8 blue, 7 green and 6 orange marbles in the bag.

One falls out at random.

What is the probability that it is

(a) green,

Answer _____ [2]

(b) not blue?

Answer _____ [1]

[Turn over



13

	Small	Medium	Large
Black	10	14	12
White	13	18	19
Red	3	6	5

The table shows information about 100 T-shirts in a shop.
One T-shirt was taken at random.

(a) What is the probability that the T-shirt was large and red?

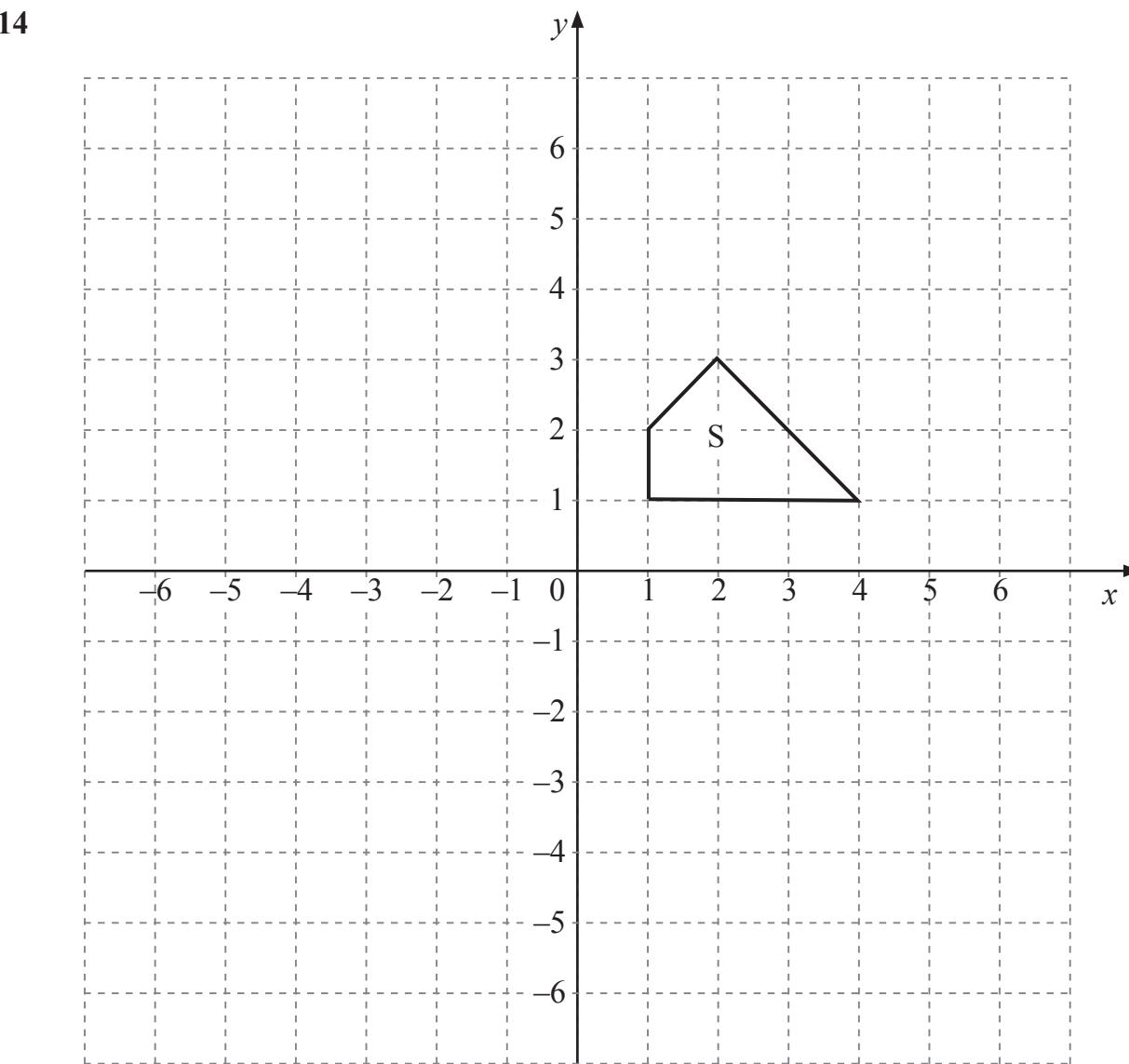
Answer _____ [1]

(b) If the T-shirt taken was white, what is the probability that it was medium?

Answer _____ [2]



14



Enlarge the shape S by a scale factor of 2 using the centre of enlargement (5, 3). [3]

[Turn over]



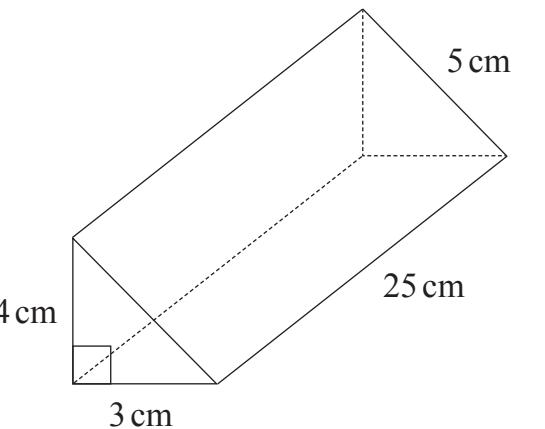
15 W and X are whole numbers.

$$W \leq 18 \text{ and } X > 20$$

What is the largest possible value for $W - X$?

Answer _____ [2]

16



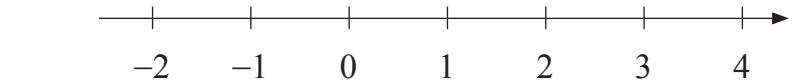
Calculate the **total surface area** of the triangular prism shown.

Answer _____ cm^2 [3]



17 Solve $2n - 5 \leq -2$ where n is an integer.

Mark the values of n on this section of the number line.



[3]

THIS IS THE END OF THE QUESTION PAPER



DO NOT WRITE ON THIS PAGE

For Examiner's use only	
Question Number	Marks
1	
2	
3	
4	
5	
6	
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8	
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10	
11	
12	
13	
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15	
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Total Marks	
Examiner Number	

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