Rewarding Learning

Centre Number

Candidate Number

General Certificate of Secondary Education
January 2019

Mathematics

Unit T5 Paper 1
(Non-calculator)
Foundation Tier

ML

[GMT51]
THURSDAY 10 JANUARY, 9.15am–10.15am

TIME

1 hour, plus your additional time allowance.

INSTRUCTIONS TO CANDIDATES

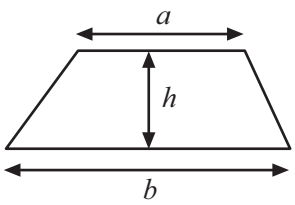
Write your Centre Number and Candidate Number in the spaces provided at the top of this page.
You must answer the questions in the spaces provided.
Do not write outside the boxed area on each page, on blank pages or tracing paper.
Complete in black ink only. **Do not write with a gel pen.**
Answer **all 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

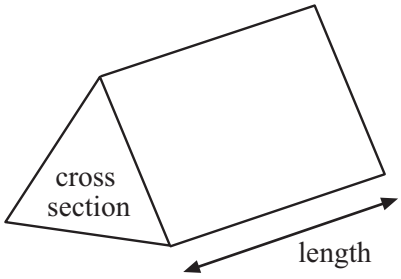
The total mark for this paper is 50.
Figures in brackets printed down the right-hand side of pages indicate the marks awarded to each question or part question.
Functional Elements will be assessed in this paper.
Quality of written communication will be assessed in Question **10**.
You should have a ruler, compasses and a protractor.
The Formula Sheet is on page 2.

Formula Sheet

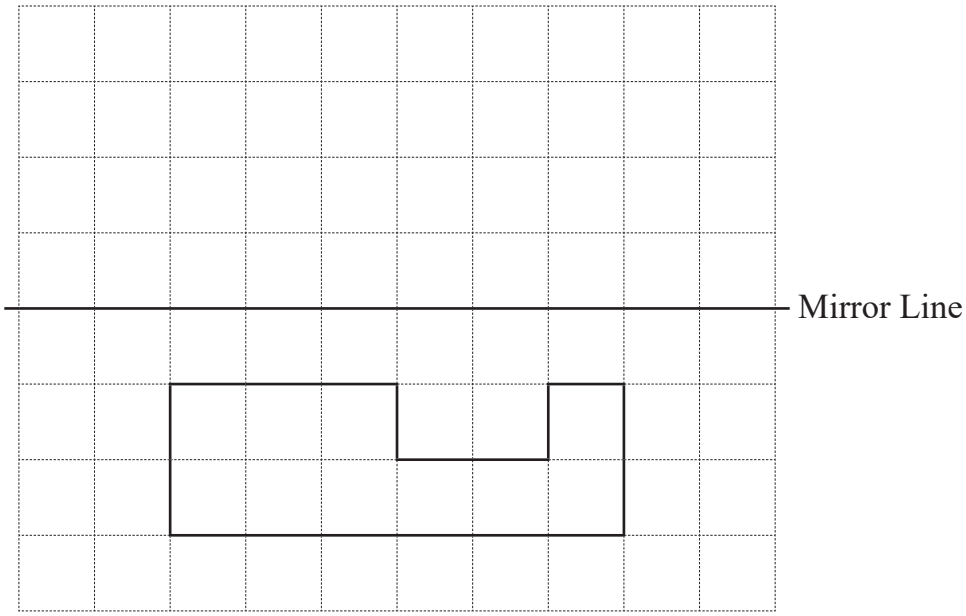
Area of trapezium $= \frac{1}{2}(a + b)h$



Volume of prism = area of cross section × length



1 Reflect the shape in the mirror line.



[2]

2 Show your working out.

(a) Estimate the cost of 58 pens at 31p each.
Write down 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
The weight of a lorry	foot
The length of a pencil	mile
	ounce
	pound
	ton
	pint
	gallon

[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

Simon did not need any parts. How do you know?

[2]

5 Look at the list below.

Impossible	Certain	Evens	Likely	Unlikely

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, Bob will need B bars, using the formula

$$B = 3P - 3$$

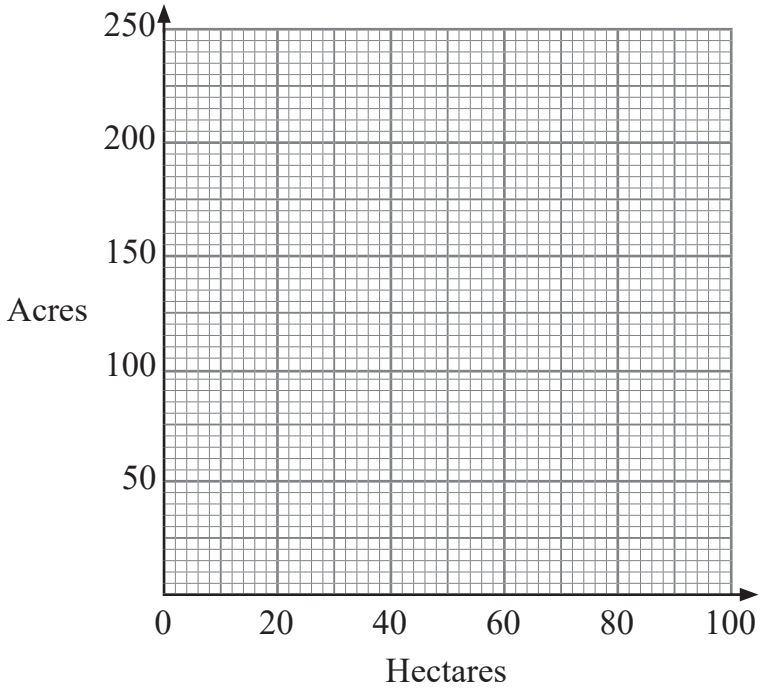
How many bars will he need for 14 posts?

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]

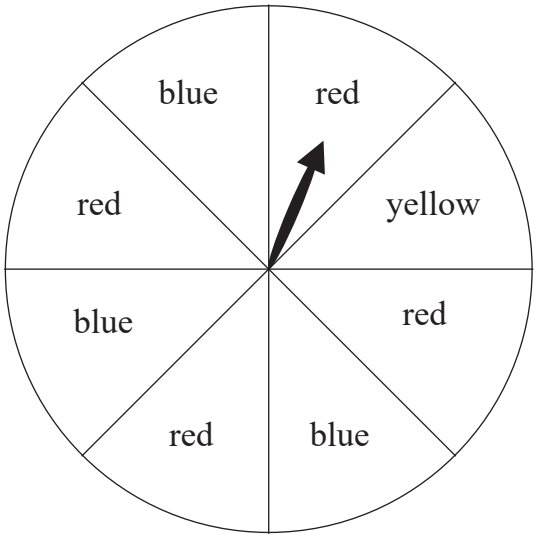
(ii) $12 - 6 \div 3$

Answer _____ [1]

(b) Round 0.04162 correct to 3 decimal places.

Answer _____ [1]

9 This 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 8 blue marbles, 7 green marbles and 6 orange marbles in a 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 Look at the table below.

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

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

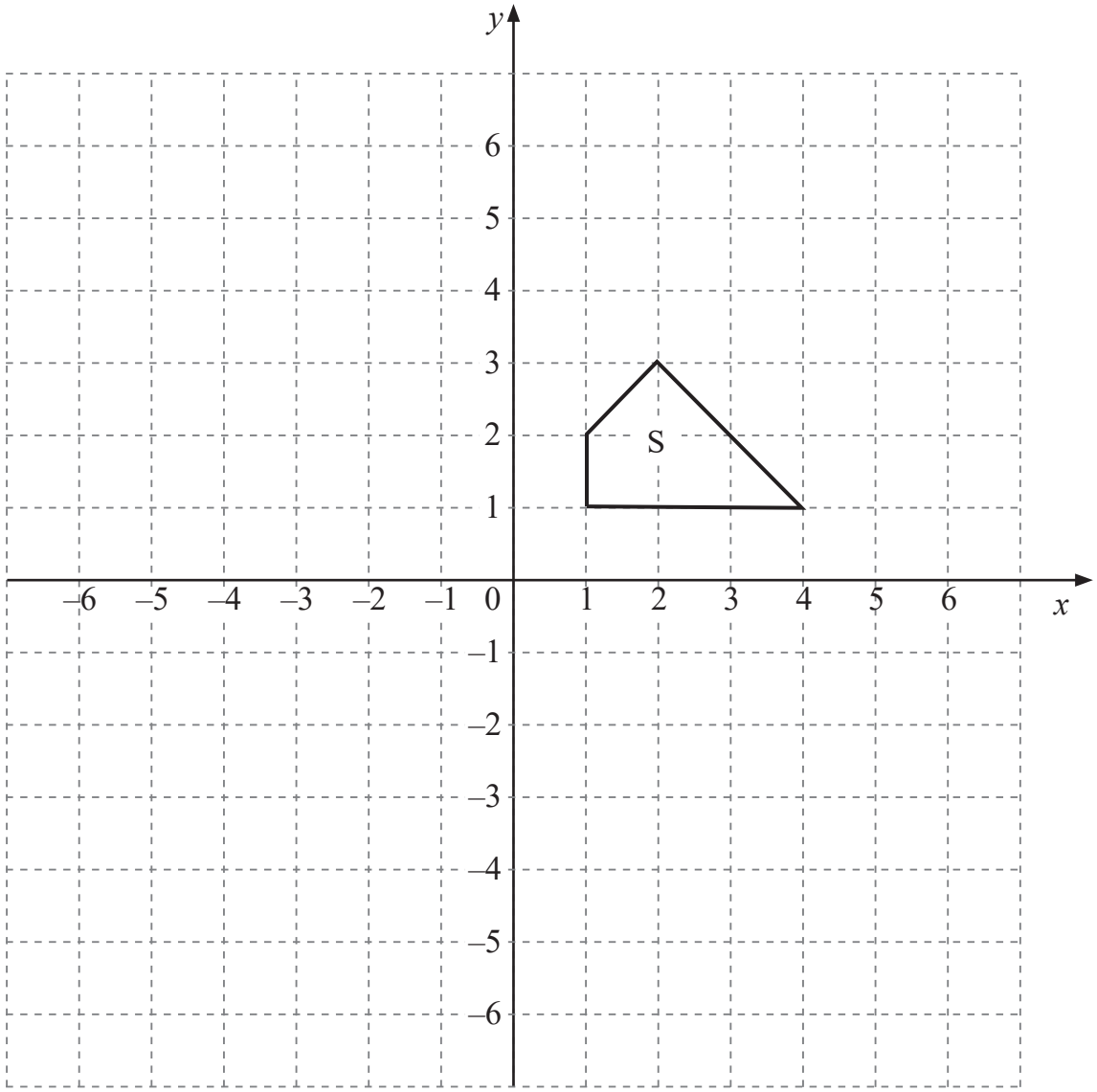
(a) What is the probability that the T-shirt was large and red?

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

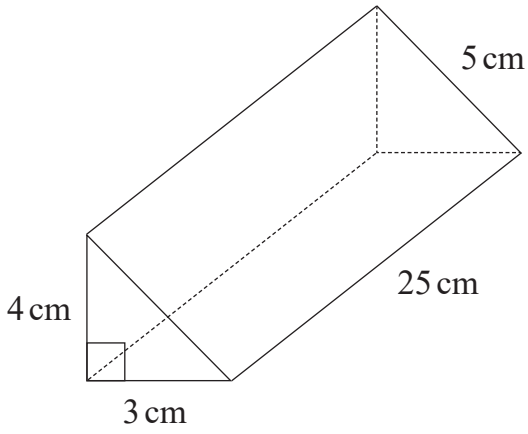
15 W and X are **whole numbers**.

$W \leq 18$ and $X > 20$

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

Answer _____ [2]

16

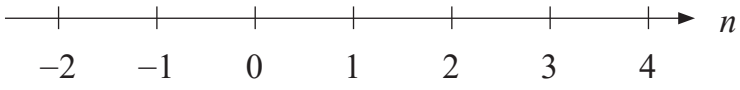


Calculate the **total surface area** of the triangular prism shown.

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]

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For Examiner's use only	
Question Number	**Marks**
1	
2	
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17	
Total Marks	

Examiner Number