



Rewarding Learning

General Certificate of Secondary Education
2013

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Candidate Number

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Mathematics

Unit T5 Paper 1

(Non-calculator)

Foundation Tier



[GMT51]

GMT51

FRIDAY 14 JUNE 9.15 am–10.15 am

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 box, around each page, on blank pages or tracing paper.**

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

Answer **all fourteen** questions.

Any working should be clearly shown in the spaces provided since 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 2**.

You should have a ruler, compasses and a protractor.

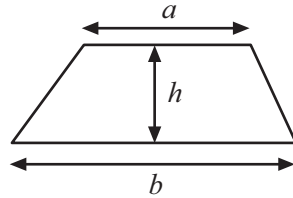
The Formula Sheet is on page 2.

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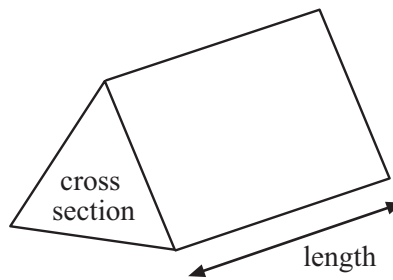


Formula Sheet

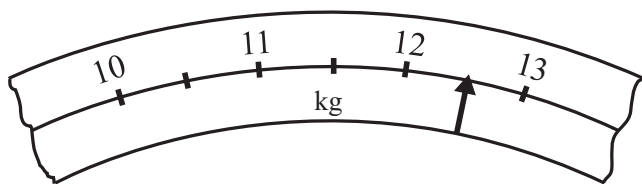
$$\text{Area of trapezium} = \frac{1}{2} (a + b)h$$



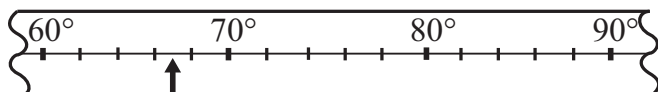
$$\text{Volume of prism} = \text{area of cross section} \times \text{length}$$



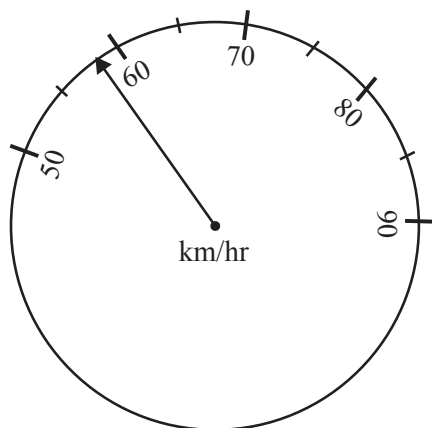
1 (a) On each of the following scales give the reading marked by the arrow.



Reading _____ kg [1]



Reading _____ ° [1]



Reading _____ km/hr [1]

(b) On the last diagram above mark clearly with an arrow a speed of 72 km/hr. [1]

Examiner Only	
Marks	Remark
Total Question 1	

[Turn over



3 Mrs Smith takes her Drama students to the theatre by bus.

The total cost of a trip can be worked out using the formula.

$$\text{Cost (£)} = 5 \times \text{Number of students} + 80$$



© Hemera / Thinkstock

(a) How much does it cost to take 16 students to the theatre?

Answer £ _____ [2]

(b) A second trip later in the year cost £125
Find how many students were on the trip this time.

Answer _____ [2]

(c) Explain what you think the 80 in the formula represents.

_____ [1]

Examiner Only

Marks Remark

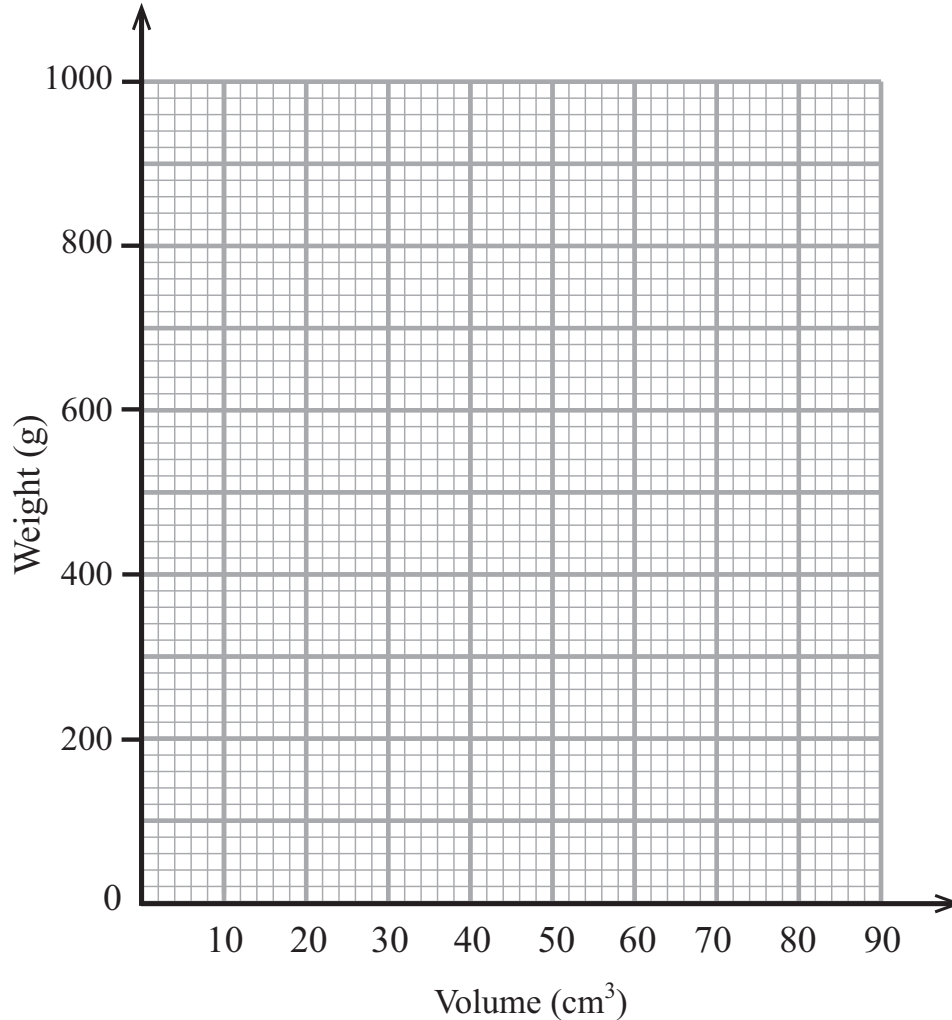
Total Question 3

[Turn over



4 The volumes and weights of bars of gold are recorded in a table.

Volume (cm ³)	10	25	35	50
Weight (g)	180	450	630	900



(a) Plot the points and draw a conversion graph. [3]

(b) Susan has a gold bar with a volume of 20 cm³.

What is the value of her gold bar if 1 g is worth £20?

Answer £ _____ [2]

Examiner Only	
Marks	Remark
Total Question 4	



5 (a) Estimate the value of $\sqrt{17} + \sqrt{83}$

You must show how you arrived at your answer.

Answer _____ [2]

(b) Calculate the value of

(i) $5 \times 4 + 6 \times 2$

Answer _____ [1]

(ii) $30 \div 6 + 4$

Answer _____ [1]

Examiner Only

Marks Remark

Total Question 5

[Turn over



6 A spinner is spun and a fair coin is tossed.
 The spinner has equally likely outcomes of 1, 2 or 3
 One of the outcomes can be recorded as (1, H) for 1 and heads.

(a) List all the other possible outcomes.

[2]

(b) What is the probability of getting an even number on the spinner and tails on the coin?

Answer _____ [1]

Examiner Only	
Marks	Remark
Total Question 6	



7 Circle TRUE or FALSE for each of the following statements:

- | | | |
|---|------|-------|
| (a) Some triangles have no lines of symmetry | TRUE | FALSE |
| (b) Some triangles have exactly one line of symmetry | TRUE | FALSE |
| (c) Some triangles have exactly two lines of symmetry | TRUE | FALSE |
| (d) Some triangles have exactly three lines of symmetry | TRUE | FALSE |
| (e) Some triangles have more than three lines of symmetry | TRUE | FALSE |

[3]

Examiner Only	
Marks	Remark
Total Question 7	
Total Question 8	

8 A rectangle has a length of 12 cm and a width of 20 cm.
The rectangle is enlarged by a scale factor of 4
Write down the new length and width of the rectangle.

Answer length _____ cm

width _____ cm

[2]

[Turn over



- 9 Dan's telephone and broadband usage for a month amounts to £40
To calculate his bill VAT at 20% must be added to his usage costs.
Work out Dan's bill for the month.

Answer £ _____ [2]

Examiner Only	
Marks	Remark
Total Question 9	

- 10 Given that $76 \times 219 = 16644$ work out the value of

(a) $16644 \div 21.9$

Answer _____ [1]

(b) 75×219

Answer _____ [1]

Total Question 10	



- 11 A fair red dice has faces marked 1, 2, 3, 4, 5, 6
 A fair blue dice has faces marked 1, 1, 3, 3, 6, 7

The table below shows all possible outcomes when the dice are thrown together.

		Red Dice					
		1	2	3	4	5	6
Blue Dice	1	(1, 1)	(1, 2)	(1, 3)	(1, 4)	(1, 5)	(1, 6)
	1	(1, 1)	(1, 2)	(1, 3)	(1, 4)	(1, 5)	(1, 6)
	3	(3, 1)	(3, 2)	(3, 3)	(3, 4)	(3, 5)	(3, 6)
	3	(3, 1)	(3, 2)	(3, 3)	(3, 4)	(3, 5)	(3, 6)
	6	(6, 1)	(6, 2)	(6, 3)	(6, 4)	(6, 5)	(6, 6)
	7	(7, 1)	(7, 2)	(7, 3)	(7, 4)	(7, 5)	(7, 6)

- (a) Calculate the probability of getting a total score of 13 on the two dice.

Answer _____ [1]

- (b) Calculate the probability of getting a larger score on the blue dice than on the red dice.

Answer _____ [1]

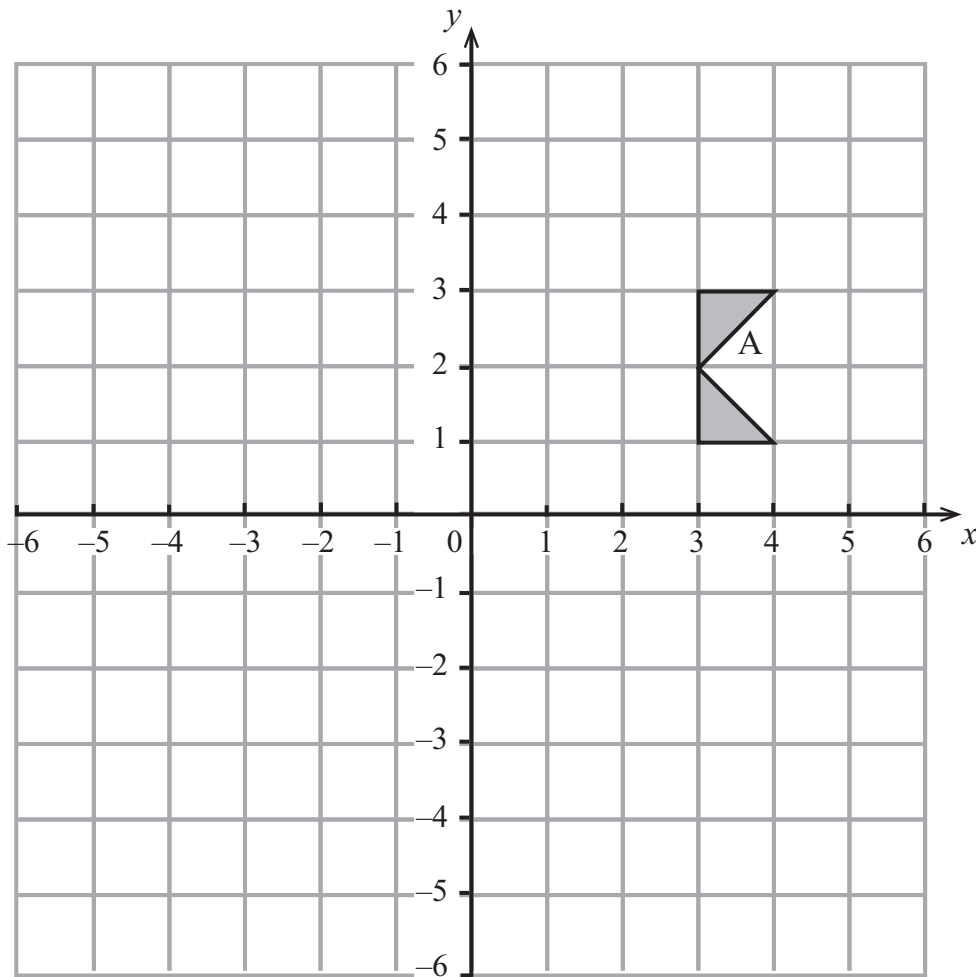
- (c) If the two dice are thrown together 360 times how many times would you expect to get a **total** score of 6?

Answer _____ [2]

Examiner Only	
Marks	Remark
Total Question 11	

[Turn over





- (a) Reflect the shape A in the diagram in the line $x = 2$
Label the new shape B.

[2]

- (b) Rotate the shape A through 90° anticlockwise about the point $(0, -2)$
Label the new shape C.

[2]

Examiner Only

Marks	Remark
Total Question 12	

Total Question 12



13 John discovered that the probability that a girl has blue eyes is 0.6

(a) What is the probability that a girl does **not** have blue eyes?

Answer _____ [1]

John asks 20 girls their eye colour. He writes some probabilities in the following table.

Colour of eyes	Brown	Green	Blue	Other
Probability	0.35	0.05		0.05

(b) Complete John's table. [2]

(c) Why do you think that John's calculated probability for blue eyes is not 0.6?

_____ [1]

Examiner Only

Marks Remark

Total Question 13

[Turn over



14 Work out the reciprocal of 1.8

Examiner Only

Marks Remark

Answer _____ [2]

THIS IS THE END OF THE QUESTION PAPER

Total Question 14





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For Examiner's use only	
Question Number	Marks
1	
2	
3	
4	
5	
6	
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8	
9	
10	
11	
12	
13	
14	

Total Marks	
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Examiner Number

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