Rewarding Learning

Centre Number

Candidate Number

General Certificate of Secondary Education
2013

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.

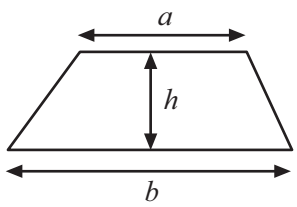
INFORMATION FOR CANDIDATES

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.

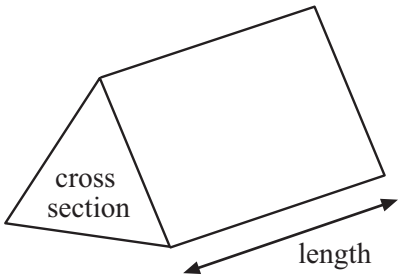
8169

Formula Sheet

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

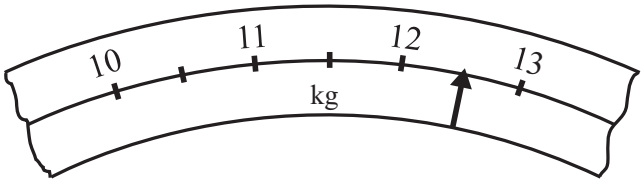


Volume of prism = area of cross section × length

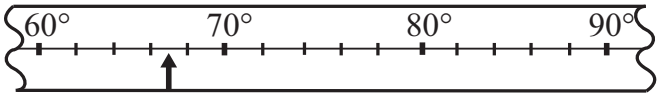


1 **(a)** On each of the following scales give the reading marked by the arrow.

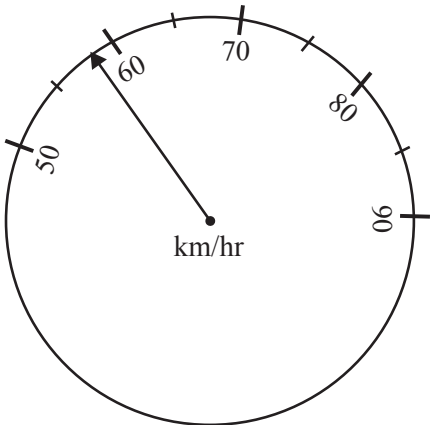
Examiner Only	
Marks	Remark



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]

Total Question 1

[Turn over

Quality of written communication will be assessed in this question.
Show your working.

Examiner Only	
Marks	Remark

2 **(a)** The desks in an examination hall are arranged in rows.
There are 22 desks in each row and there are 9 rows of desks in the hall.
Estimate the total number of desks in the hall.
You must show how you arrived at your answer.

Answer _____ desks [2]

(b) A book contains 382 pages.
The book is divided into 22 chapters of equal length.
Estimate the number of pages in each chapter.
You must show how you arrived at your answer.

Answer _____ pages [2]

(c) A book of stamps costs £2.76
Estimate how many books of stamps John can buy for £21
You must show how you arrived at your answer.

Answer _____ books of stamps [2]

Total Question 2

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.

Cost (£) = 5 × Number of students + 80

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(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.

_____

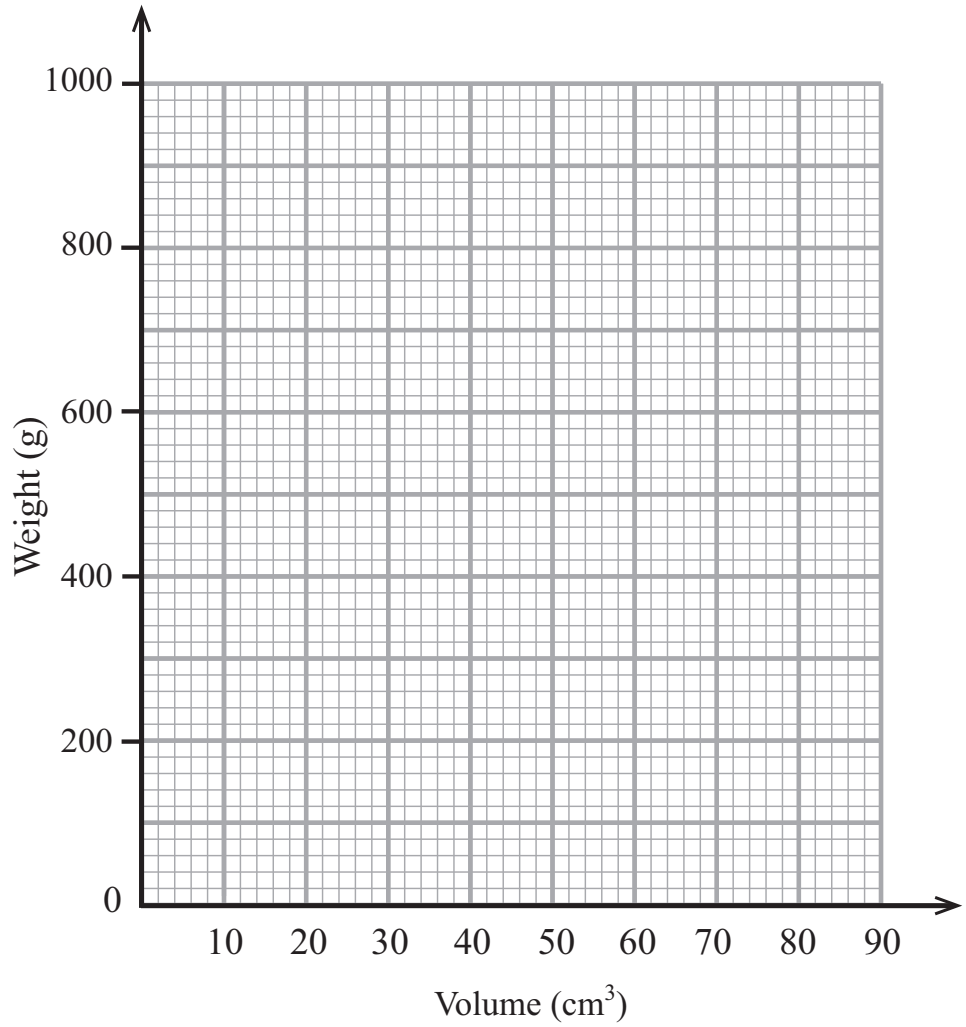
_____ [1]

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 cm^3.

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

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]

Total Question 8

[Turn over

Examiner Only	
Marks	Remark

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]

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.

Blue Dice \ Red Dice	1	2	3	4	5	6
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]

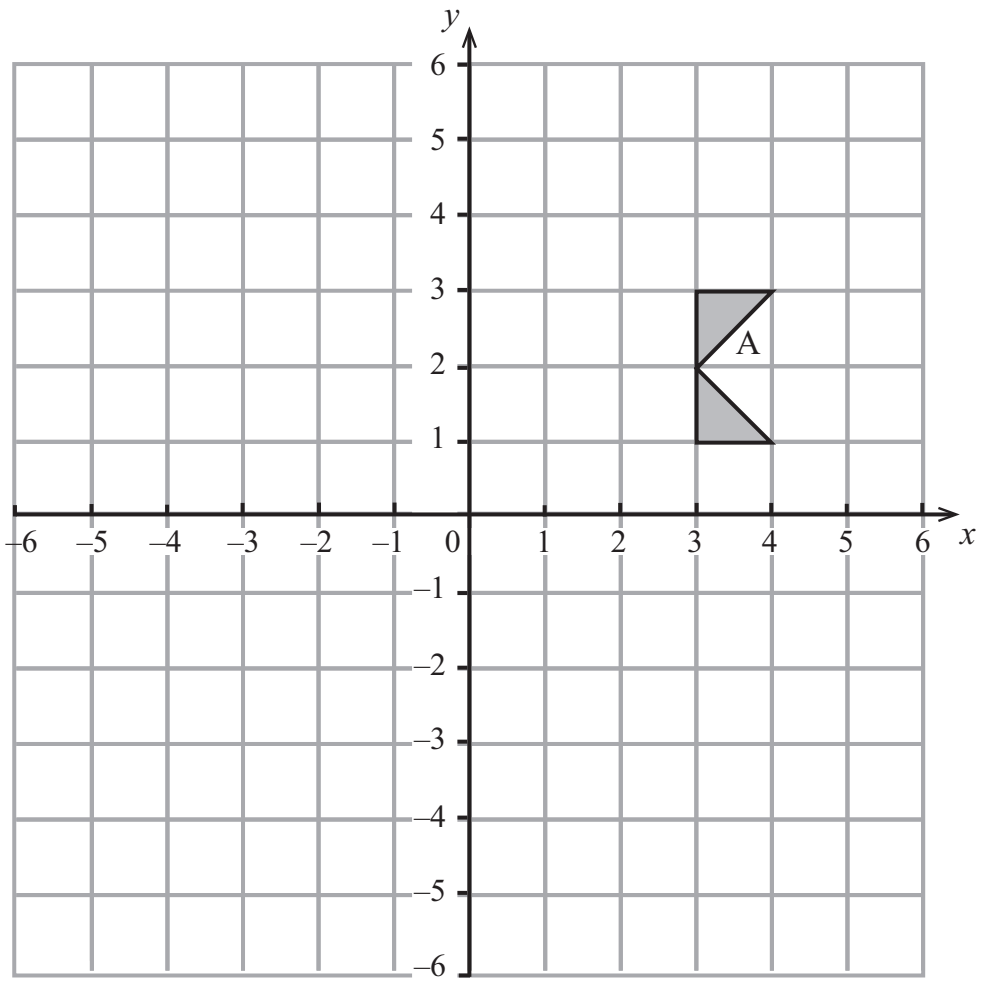
(c) If the two dice are thrown together 360 times how many times would you expect to get a **total** score of 6?

Answer _____ [2]

Examiner Only	
Marks	Remark
Total Question 11	

[Turn over

12



(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	

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

Examiner Only	
Marks	Remark

(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]

Total Question 13

[Turn over

14 Work out the reciprocal of 1.8

Answer _____ [2]

Examiner Only	
Marks	Remark
Total Question 14	

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For Examiner's use only	
Question Number	**Marks**
1	
2	
3	
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11	
12	
13	
14	
Total Marks	

Examiner Number