

Rewarding Learning


## Mathematics

## Unit T1

(With calculator)
Foundation Tier


## [GMT11]

*GMT11*
TUESDAY 27 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. 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 twenty-eight 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 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 questions 23 and 24.
You should have a calculator, ruler, compasses and a protractor.
The Formula Sheet is on page 2.
8797.04 ML

## Formula Sheet

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


Volume of prism $=$ area of cross section $\times$ length


1 Look at the grid below.

(a) What is at position $(6, \mathrm{D})$ ?

Answer $\qquad$
(b) What is the position of the shops?

Answer $\qquad$ , $\qquad$ [1]
(c) The Beach Bar is at position $(4, \mathrm{~A})$.

Mark the position of the Beach Bar on the grid.
Write a B at position (4, A).

2 Look at the table below. It shows some numbers of each type of medal won by three countries in the 2012 Olympics.

| Country | Gold | Silver | Bronze | Total |
| :--- | :---: | :---: | :---: | :---: |
| USA | 46 |  |  | 104 |
| China | 38 | 27 | 23 |  |
| Japan |  |  | 17 | 38 |

(a) How many medals did China win in total?

Answer $\qquad$ [1]
(b) The USA won an equal number of Silver medals and Bronze medals. How many Silver medals did the USA win?

Answer $\qquad$ [2]
(c) Japan won twice as many Silver medals as Gold medals. How many Gold medals did Japan win?

Answer $\qquad$ [2]

| Examiner Only |  |
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3 Look at the sentences below.
The sentences are about the four winning numbers in a lottery.
The 1 st number is the square root of 576
The 2 nd number is a multiple of 8 between 30 and 39
The 3 rd number is the cube of 3
The 4th number is the largest prime number less than 40
What are the 4 winning numbers?

Answer 1st $\qquad$ 2nd $\qquad$ 3rd $\qquad$ 4th $\qquad$ [4]

Examiner Only | Marks | Remark |
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4 Year 10 pupils are going on a trip.
Their teacher hires 3 buses. Each bus has 52 passenger seats.
(a) How many passenger seats are there in total?

Answer $\qquad$

9 teachers and 135 pupils are going on the trip.
(b) How many empty seats are there in total?

Answer $\qquad$
(c) How many teachers and how many pupils should go on each bus for safety reasons?

Complete the following sentence.
I would put $\qquad$ teachers and $\qquad$ pupils on each bus.


5 (a) Look at the sequence below.
What is the next term?
$1,6,11,16$ $\qquad$

Answer $\qquad$ [1]
(b) These patterns of squares are the first 3 in a sequence.


Pattern 1


Pattern 2


Pattern 3

(i) Draw pattern 4 in the sequence.
(ii) Count the number of squares in each pattern and write them in the
(ii) sentence below.

What is this sequence of numbers called?

The numbers are $\qquad$ , $\qquad$ , $\qquad$ and $\qquad$ and they are called $\qquad$ numbers.
$\qquad$

6140 drinks were sold in a café. The first four rows of a pictogram of the drink sales are shown below.

## Drink Sales

Coffee
0000000
Tea
000
Cola
000000000
Orange
0000
Hot Chocolate
(a) 45 colas were sold.

Complete the key:

$$
\mathrm{O}=
$$

$\qquad$ drinks [1]
(b) How many coffees were sold?

## Answer

$\qquad$
(c) How many more colas than teas were sold?

Answer $\qquad$
(d) Complete the row of the pictogram for hot chocolate.

7 Jake recorded the colours of cars passing his house using a tally chart.

| Colour | Tally | Frequency |
| :---: | :--- | :---: |
| Red | $H H \\| \mid$ | 8 |
| White | $\\|\\|$ | 3 |
| Black | $H$ | 5 |
| Silver | $H H\\|\\| \mid$ | 9 |
| Blue | $\\|\\|\\|$ | 4 |

(a) On the grid below, draw a bar chart to show this information.

(b) Which is the most popular colour of car?

Answer $\qquad$ [1]

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(c) How many cars did Jake record altogether?

8 Here are some triangles on a grid.

(a) Which triangle is isosceles?

Answer $\qquad$
(b) Write down the special name for triangle E.

Answer $\qquad$
Two of the triangles are congruent.
(c) Write down the letters of the two triangles which are congruent.

Total Question 8

|  |  |
| :--- | :--- | [1]

[^0]$\qquad$ and $\qquad$

9 Look at the L-shape on the centimetre grid below.

(a) What is the perimeter of the L-shape?

Answer $\qquad$ cm [2]
(b) On the grid below draw a square with the same perimeter as the
L-shape opposite.
Cans of Cola are sold in packs of 6 .
There are 135 children at a party.
How many packs of Cola are needed to give each child one can of Cola?
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11 (a) Write in order of size, smallest first
$\frac{1}{5}, \quad 0.26, \quad 19 \%$

Answer $\qquad$ , $\qquad$ , $\qquad$
(b) Write 0.157 as a fraction.

Answer $\qquad$

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Total Question 11

12 Look at the table below.
It shows the items Ben bought and how much they cost.

| Item | Cost |
| :--- | :--- |
| A calculator | $£ 6.80$ |
| A ruler | 60 p |
| A pack of 3 pens | $£ 5.45$ |
| A file block | $£ 3.20$ |

Ben pays for the items with a $£ 20$ note.
Calculate the change that Ben should receive.
$\qquad$ [3]


13 Sam owns 30 acres of land.
15 acres are grass.
12 acres are woodland.
The rest is marsh.
(a) Write, in its simplest form, the fraction of Sam's land that is woodland.

> Answer
$\qquad$
(b) What percentage of Sam's land is marsh?

Answer $\qquad$ \% [2]

Total Question 13

14 Sixteen students had the following number of coins in their pockets.

$$
9, \quad 3, \quad 5, \quad 8, \quad 2, \quad 7, \quad 4, \quad 8, \quad 7, \quad 3, \quad 8, \quad 6, \quad 5, \quad 9, \quad 8, \quad 5
$$

(a) What is the mode of the number of coins?

Answer $\qquad$
(b) What is the range of the number of coins?

Answer $\qquad$
(c) What is the median number of coins?

Answer
[2]
Total Question 14

$\qquad$ [Turn over
8797.04 ML

15 The pie chart shows how Jessica spent 6 hours doing sports one day.

(a) How much time was spent on the javelin?

Answer $\qquad$
(b) Calculate the time spent running.

Answer $\qquad$ [1]

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(a) Work out the value of $y$.

Answer $y=$ $\qquad$
(b) Give a reason for your answer.

Reason $\qquad$
[Turn over

17 (a) Look at the triangle ABC drawn on the centimetre grid below. Work out the area.

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Answer $\qquad$ ${ }^{\circ}$ [1]
(b) Measure the size of angle C in the triangle above.

Answer $\qquad$ $\mathrm{cm}^{2}$ [2]





#### Abstract

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18 The diagram below shows a cuboid.

(a) Work out the volume of the cuboid.

Answer $\qquad$ $\mathrm{cm}^{3}$ [2]

(b) On the centimetre grid below, complete the net of the cuboid.


Examiner Only
Marks $\quad$ Remark
[3]

[Turn over

19 (a) Fill in the missing number.


[1]
(b) Fill in the missing number.

[2]

20 Here is a sequence of numbers

$$
0, \quad 0.2, \quad 0.5, \quad 0.9, \quad . . . . .
$$

(a) What is the next number in this sequence?

Answer $\qquad$ [1]
(b) Explain how to get each new number in this sequence.
$\qquad$
$\qquad$

## 21 Calculate

(a) $\sqrt{7.84}-1.3^{2}$

Answer $\qquad$ [2]
(b) $\frac{1}{0.4^{3}}$

Answer $\qquad$ [1]

22 There were 304000 flights from 10 UK airports. 74\% of these flights were on time.

How many flights were on time?

Answer $\qquad$ [2]

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Quality of written communication will be assessed in this question.
23 Tina bought a garden ornament costing $£ 12.75$ She also bought some shrubs. Each shrub cost $£ 3.15$
The total cost was $£ 31.65$
How many shrubs did she buy?

Quality of written communication will be assessed in this question.
24 Explain how $6^{2} \div \sqrt[3]{64}=3^{2}$
[2]

| Examiner Only |  |
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25 The stem and leaf diagram shows the weights of some schoolbags.

| 2 | 5 | 6 | 7 | 9 |  |  | Key $2 \mid 5=2.5 \mathrm{~kg}$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| 3 | 1 | 3 | 7 | 8 | 8 | 9 |  |
| 4 | 2 | 3 | 5 | 7 | 9 |  |  |
| 5 | 3 | 4 | 5 | 6 | 8 |  |  |
| 6 | 2 | 4 | 6 |  |  |  |  |

Write down
(a) the range,

$$
\text { Answer } \quad \mathrm{kg} \text { [1] }
$$

(b) the median.

Answer $\qquad$ kg [1]

26 (a) Use the decision tree diagram to write the sports below in the correct boxes.


(b) The table below shows the number of items sold in a shop.

| Item | Number | Angle |
| :--- | :---: | :---: |
| Television | 25 |  |
| Fridge | 12 |  |
| Washing Machine | 8 |  |
| Camera | 15 |  |

Draw a pie chart to show this information.

[4]

[Turn over

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27 (a) The diagram shows a triangle.

Work out the size of the angle marked $x$

Answer $x=$ $\qquad$ ${ }^{\circ}$ [2]

(b) A map of an island is shown below.

L and M are the positions of two houses on the island.


Calculate the actual distance from L to M in kilometres.
$\qquad$ km [2]
(c) A sheet of A4 paper is a rectangle 297 mm long and 210 mm wide.

Calculate the area of a sheet of A4 paper.
Give your answer in square centimetres.

Answer $\qquad$ $\mathrm{cm}^{2}$ [2]
(d) PQR is an isosceles triangle.
$P Q=Q R$.


Calculate the angles $x$ and $y$.

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28 (a) Solve
(i) $\frac{y}{4}=12$

$$
\text { Answer } y=
$$

(ii) $2 d-4=5$

Answer $d=$
(b) $12 f=20$ Write down the value of $3 f$

Answer $\qquad$

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