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Rewarding Learning

**General Certificate of Secondary Education
2014**

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.
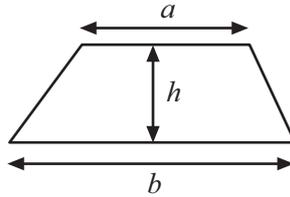Functional Elements will be assessed in this paper.
Quality of written communication will be assessed in **questions 23 and 24**.
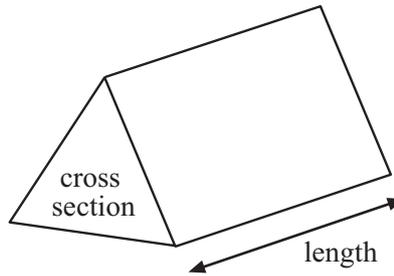You should have a calculator, ruler, compasses and a protractor.
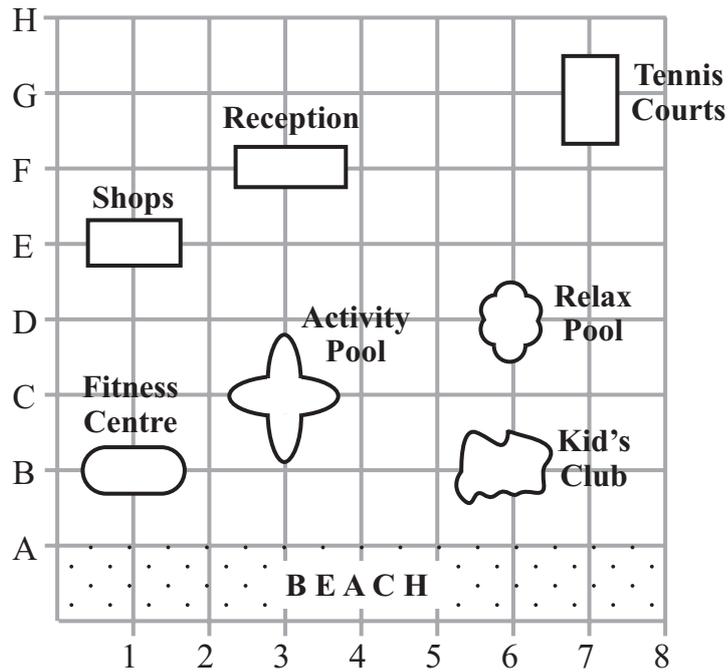The Formula Sheet is on page 2.

Formula Sheet

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

Volume of prism = area of cross section × length

1   Look at the grid below.

(a) What is at position (6, D)?

Answer _____ [1]

(b) What is the position of the shops?

Answer (_____ , _____) [1]

(c) The Beach Bar is at position (4, A).

Mark the position of the Beach Bar on the grid.
Write a **B** at position (4, A).   [1]

Total Question 1

[Turn over

8797.04 **ML**

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 _____ [1]

(b) The USA won an equal number of Silver medals and Bronze medals.

How many Silver medals did the USA win?

Answer _____ [2]

(c) Japan won twice as many Silver medals as Gold medals.

How many Gold medals did Japan win?

Total Question 2

Answer _____ [2]

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4

3 Look at the sentences below.
The sentences are about the four winning numbers in a lottery.

The 1st number is the square root of 576

The 2nd number is a multiple of 8 between 30 and 39

The 3rd 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 _____ 2nd _____ 3rd _____ 4th _____ [4]

Examiner Only	
Marks	Remark

Total Question 3

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 _____ [1]

9 teachers and 135 pupils are going on the trip.

(b) How many empty seats are there in total?

Answer _____ [2]

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

Complete the following sentence.

I would put _____ teachers and _____ pupils on each bus.   [2]

Total Question 4

[Turn over

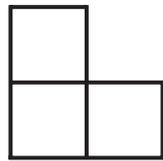**5** **(a)** Look at the sequence below.
What is the next term?

1, 6, 11, 16 ....

Answer _____ [1]

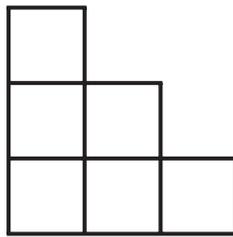**(b)** These patterns of squares are the first 3 in a sequence.

Pattern 1   Pattern 2   Pattern 3   Pattern 4

(i) Draw pattern 4 in the sequence. [1]

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

What is this sequence of numbers called?

The numbers are _____ , _____ , _____ and _____

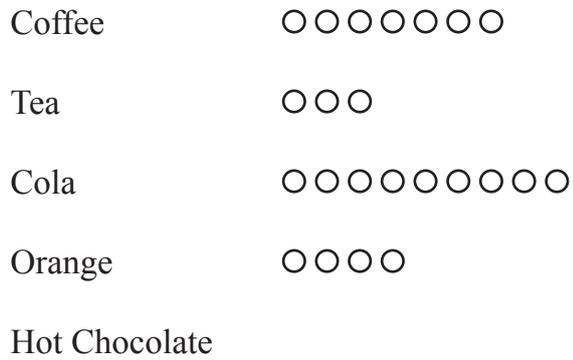and they are called _____ numbers. [2]

Total Question 5

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6

6 140 drinks were sold in a café. The first four rows of a pictogram of the drink sales are shown below.

Drink Sales

Coffee ○○○○○○○

Tea ○○○

Cola ○○○○○○○○

Orange ○○○○

Hot Chocolate

(a) 45 colas were sold.

Complete the key: ○ = _____ drinks [1]

(b) How many coffees were sold?

Answer _____ [1]

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

Answer _____ [1]

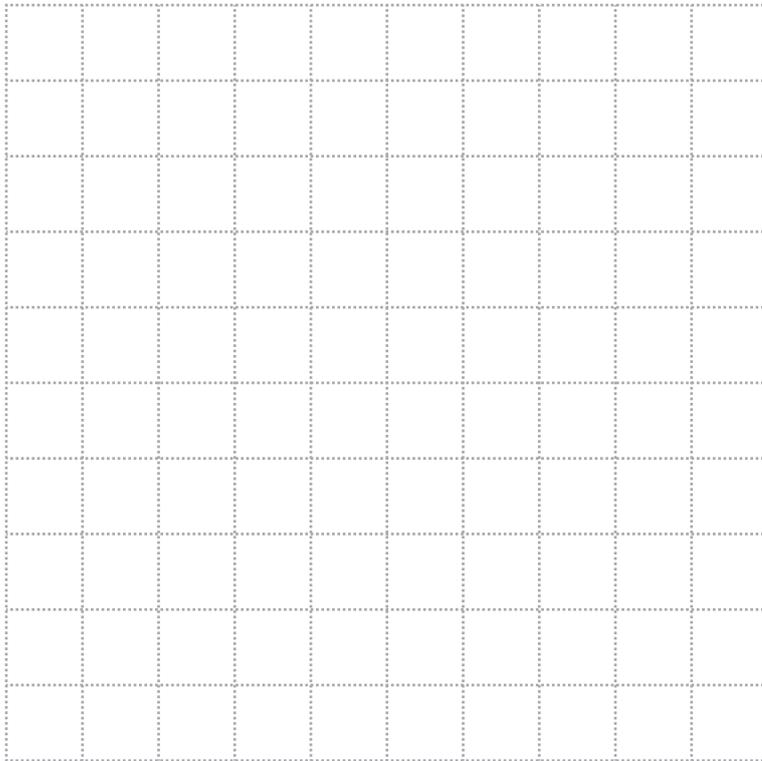**(d)** Complete the row of the pictogram for hot chocolate.

[2]

Total Question 6

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

Colour	Tally	Frequency
Red	⦀⦀ |||	8
White	|||	3
Black	⦀⦀	5
Silver	⦀⦀ ||||	9
Blue	||||	4

(a) On the grid below, draw a bar chart to show this information.
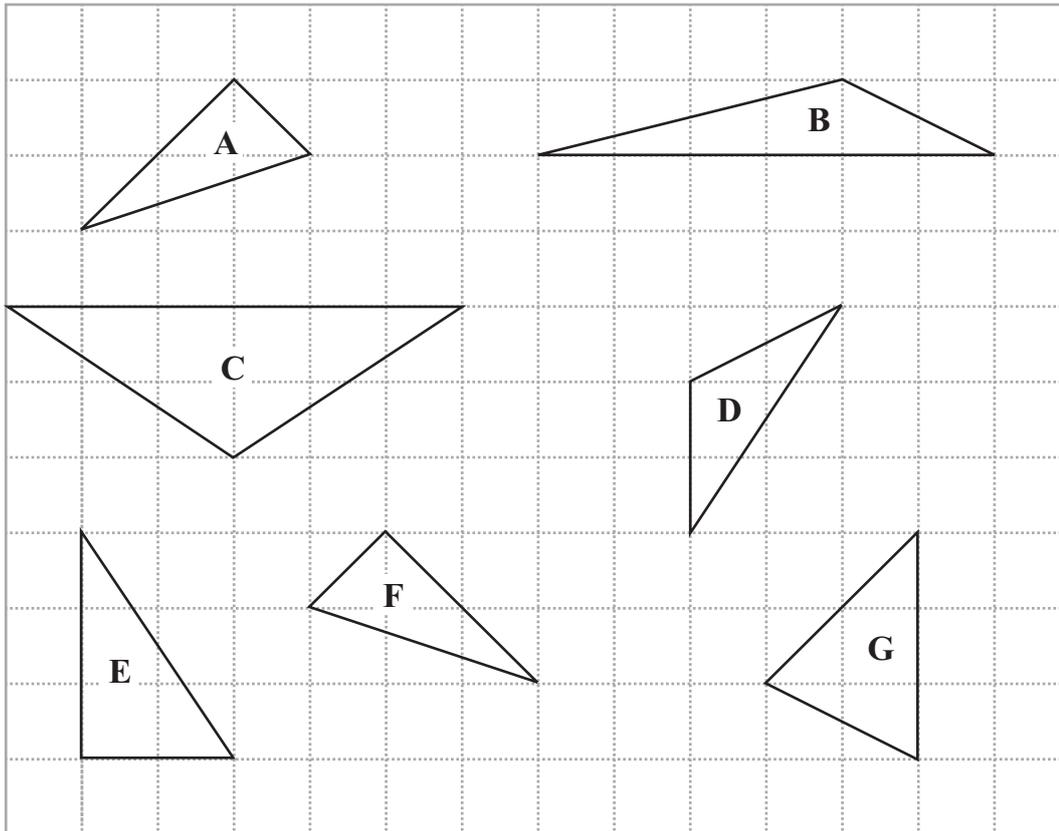
[3]

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

Answer _____ [1]

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8

(c) How many cars did Jake record altogether?

Total Question 7

Answer _____ [1]

8 Here are some triangles on a grid.

(a) Which triangle is isosceles?

Answer _____ [1]

(b) Write down the special name for triangle E.

Answer _____ [1]

Two of the triangles are congruent.

Total Question 8

(c) Write down the letters of the two triangles which are congruent.

Answer _____ and _____ [1]   **[Turn over**

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9

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

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

Answer _____ cm [2]

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(b) On the grid below draw a square with the same perimeter as the L-shape opposite.

[1]
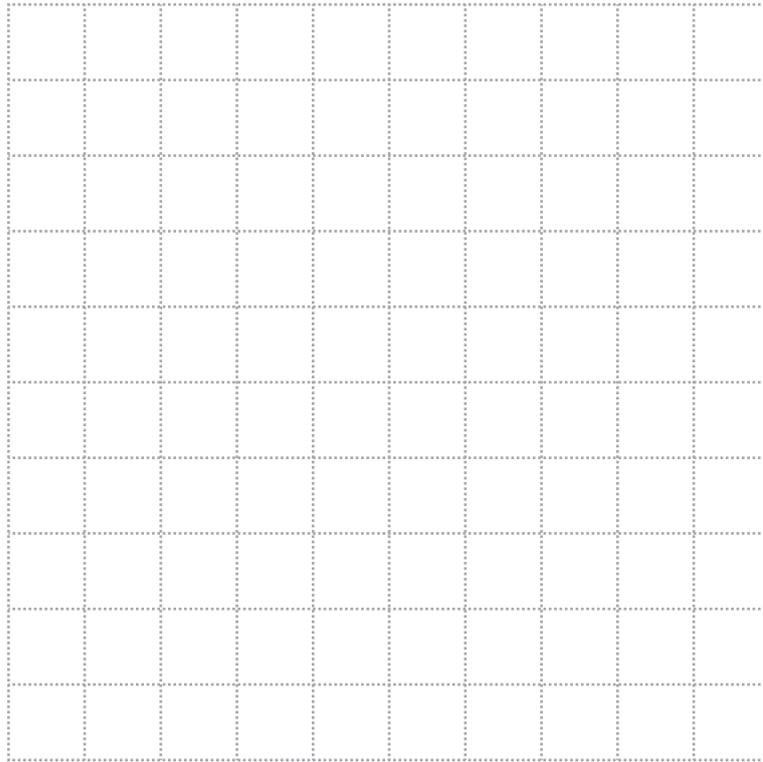
Total Question 9

10 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?

Total Question 10

Answer _____ [2]

[Turn over

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11

11 (a) Write in order of size, smallest first

$\frac{1}{5}$, 0.26, 19%

Answer _____ , _____ , _____ [2]

(b) Write 0.157 as a fraction.

Answer _____ [1]

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	60p
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.

Answer £ _____ [3]

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12

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

Running

Discus

High Jump

Long Jump

Javelin

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

Answer _____ [1]

(b) Calculate the time spent running.

Answer _____ [1]

Total Question 15

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14

16

diagram not
drawn accurately

y 44°

(a) Work out the value of y.

Answer $y =$ _____ ° [1]

(b) Give a reason for your answer.

Reason _____ [1]

Total Question 16

[Turn over

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15

17 (a) Look at the triangle ABC drawn on the centimetre grid below.
Work out the area.
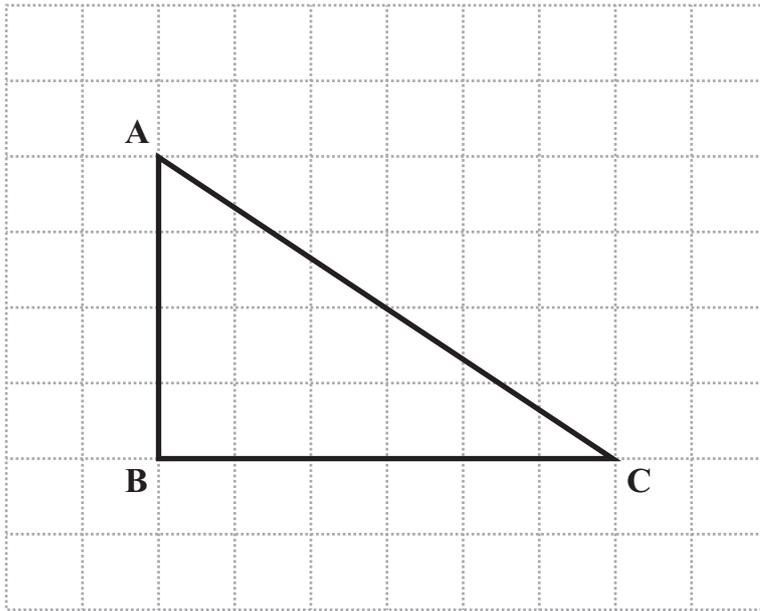
Answer _____ cm^2 [2]

(b) Measure the size of angle C in the triangle above.

Answer _____ ° [1]

Total Question 17

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16

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(Questions continue overleaf)

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18 The diagram below shows a cuboid.

3 cm

4 cm

6 cm

(a) Work out the volume of the cuboid.

Answer _____ cm^3 [2]

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18

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

Marks	Remark

[3]
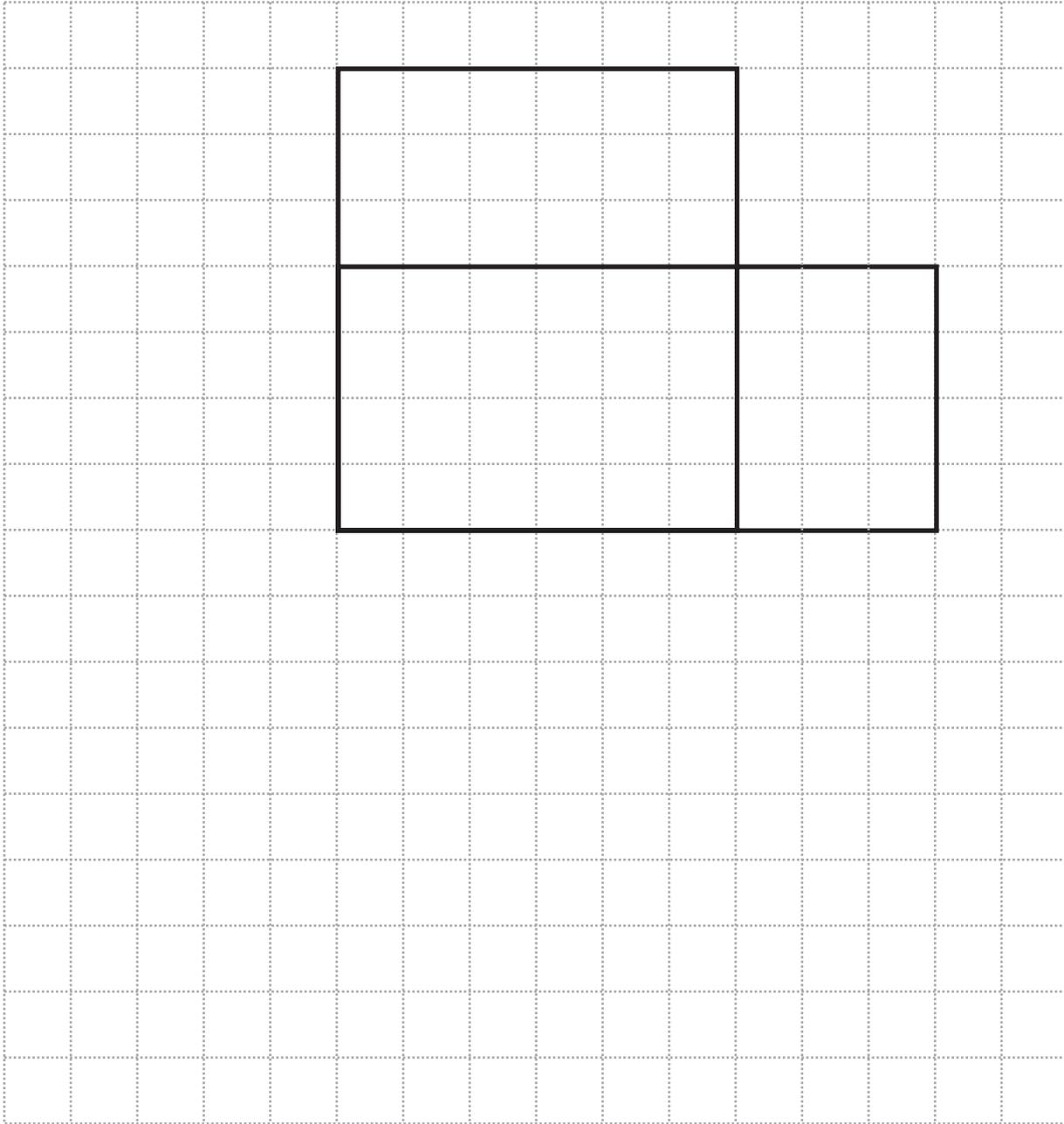
Total Question 18

[Turn over

8797.04 **ML**

19

19 (a) Fill in the missing number.

$$5 \quad \rightarrow \quad \boxed{\times 3} \quad \rightarrow \quad \boxed{-6} \quad \rightarrow \quad \bigcirc$$

[1]

(b) Fill in the missing number.

$$\bigcirc \quad \rightarrow \quad \boxed{\div 5} \quad \rightarrow \quad \boxed{+18} \quad \rightarrow \quad 20$$

[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 _____ [1]

(b) Explain how to get each new number in this sequence.

_____

_____ [1]

---

21 Calculate

(a) $\sqrt{7.84} - 1.3^2$ Answer _____ [2]

(b) $\dfrac{1}{0.4^3}$ Answer _____ [1]

8797.04 **ML**

22 There were 304 000 flights from 10 UK airports. 74% of these flights were on time.

How many flights were on time?

Answer _____ [2]

Examiner Only	
Marks	Remark

Total Question 22

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?

Answer _____ [3]

Total Question 23

8797.04 **ML**

[Turn over

21

Quality of written communication will be assessed in this question.

24 Explain how $6^2 \div \sqrt[3]{64} = 3^2$

[2]

Total Question 24

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22

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

2	5	6	7	9			Key 2	5 = 2.5 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,

Answer _____ kg [1]

(b) the median.

Answer _____ kg [1]

Total Question 25

[Turn over

8797.04 **ML**

23

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

CYCLING GYMNASTICS ROWING TENNIS

SPORT

Has the sport an even number of letters?

Yes — No

Does the sport have two letters the same?

Does the sport have more than one vowel?
Vowels: A, E, I, O, U

Yes — No Yes — No

[2]

8797.04 **ML**

(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]

Total Question 26

[Turn over

8797.04 **ML**

25

27 (a) The diagram shows a triangle.

diagram not
drawn accurately

x

77°   49°

Work out the size of the angle marked x

Answer $x =$ _____° [2]

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

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

Scale: 1 cm = 6 km
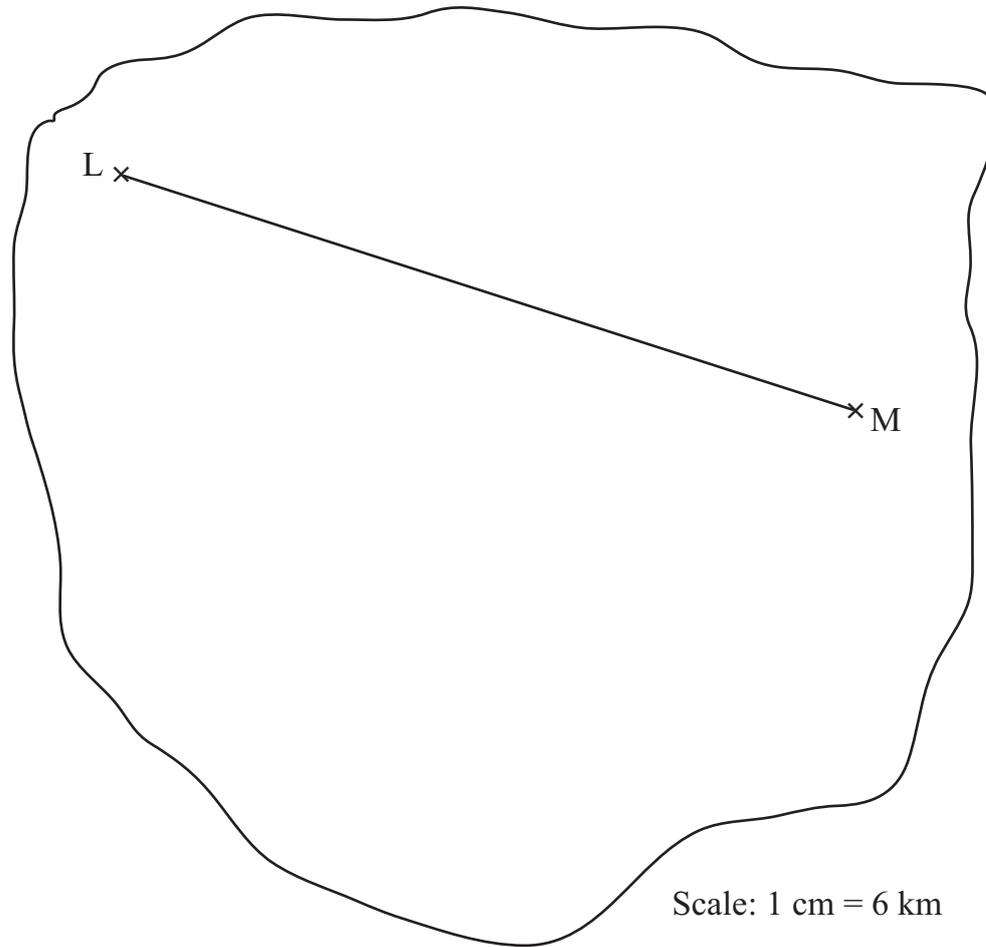
Calculate the actual distance from L to M in kilometres.

Answer _____ km [2]

8797.04 **ML**

27

(c) A sheet of A4 paper is a rectangle 297 mm long and 210 mm wide.
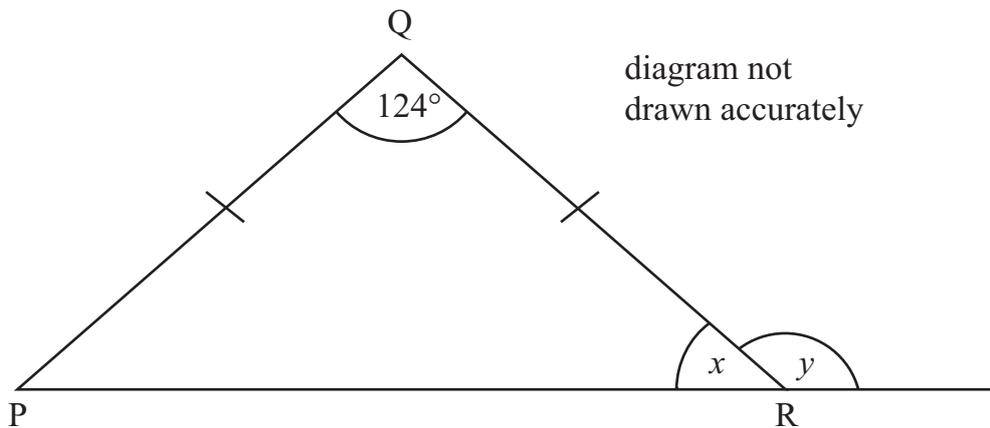
Calculate the area of a sheet of A4 paper.

Give your answer in square centimetres.

Answer _____ cm^2 [2]

(d) PQR is an isosceles triangle.

PQ = QR.

Q

124°

diagram not
drawn accurately

x y

P   R

Calculate the angles x and y.

Answer $x =$ _____°

$y =$ _____° [3]

Total Question 27

8797.04 **ML**

28

28 (a) Solve

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

Answer $y =$ _____ [1]

(ii) $2d - 4 = 5$

Answer $d =$ _____ [2]

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

Answer _____ [1]

Examiner Only	
Marks	Remark

Total Question 28

8797.04 **ML**

29

THIS IS THE END OF THE QUESTION PAPER

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For Examiner's use only	
Question Number	Marks
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8797.04 **ML**