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Rewarding Learning

**General Certificate of Secondary Education
2013**

Mathematics

Unit T1

(With calculator)

Foundation Tier

[GMT11]

GMT11

TUESDAY 11 JUNE, 9.15 am–10.45 am

TIME

1 hour 30 minutes.

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-four** 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.
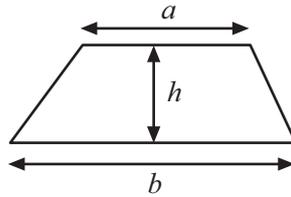Quality of written communication will be assessed in **question 22**.
You should have a calculator, ruler, compasses and a protractor.
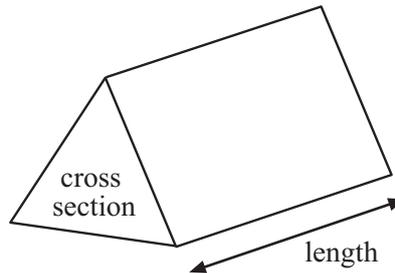The Formula Sheet is on page 2.

8165

24GMT1101

Formula Sheet

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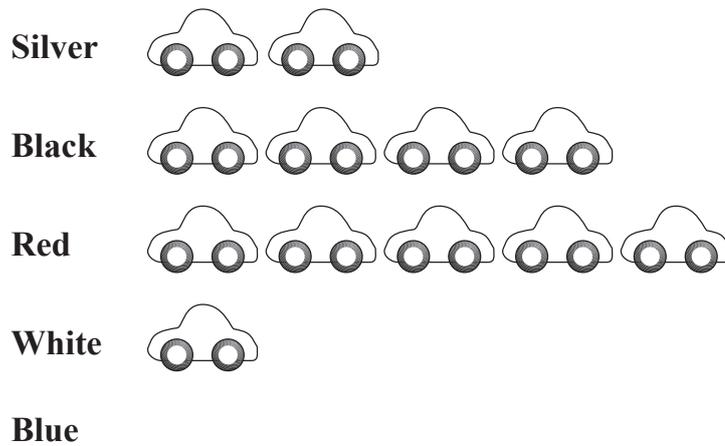

Volume of prism = area of cross section × length

8165

24GMT1102

1 60 cars were sold in a garage. The first four rows of the pictogram are shown below.

Car Sales

Silver

Black

Red

White

Blue

(a) 20 red cars were sold.

Complete the key: = _____ cars [1]

(b) How many black cars were sold?

Answer _____ [1]

(c) How many more red cars than silver cars were sold?

Answer _____ [1]

(d) Complete the row of the pictogram for blue cars. [2]

Total Question 1

[Turn over

8165

2 **(a)** Write nine thousand in figures.

Answer _____ [1]

(b) Circle three numbers below that round to nine thousand to the nearest thousand.

9473   90003   8977   899   9511   8495   8500   [3]

3 Here are five digits.   5   1   8   7   3

(a) Use **all** of the digits to write the largest possible number.

Answer _____ [1]

(b) Use **four** of the digits to write an even number.

Answer _____ [1]

(c) Use **two** of the digits to write a multiple of 7

Answer _____ [1]

(d) Use **two** of the digits to write a square number.

Answer _____ [1]

(e) Use **four** of the digits to write **two** numbers that add up to 70

Answer _____ and _____ [2]

8165

4 **(a)** Phillip is plotting points to
form a square.
He has plotted 3 points and
drawn 2 sides.
Write down the co-ordinates
of the 4th corner.

Answer (_____ , _____) [2]
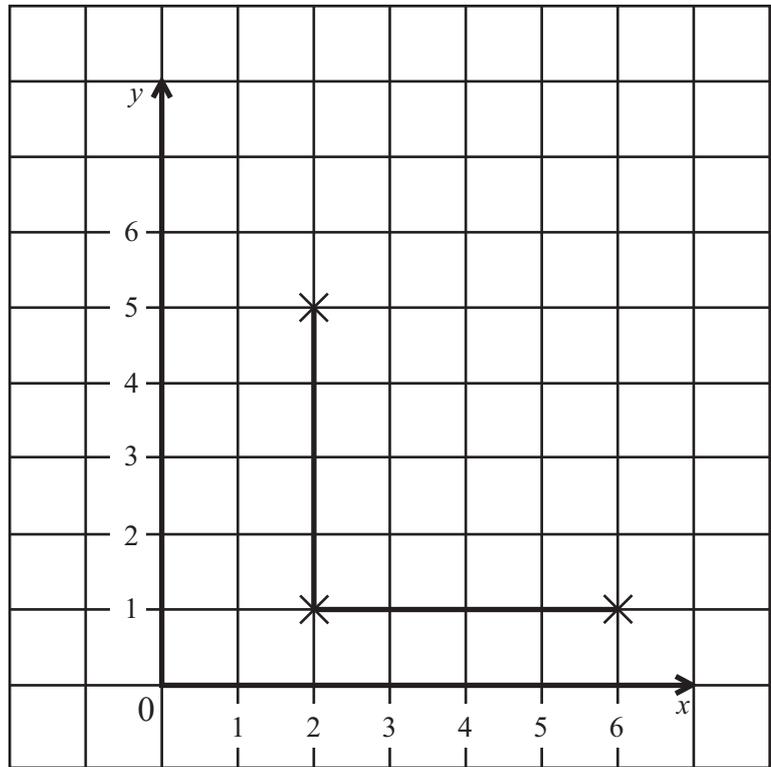
(b) The first 4 odd numbers are 1, 3, 5, 7

What number is 1 less than the 10th odd number?

Answer _____ [2]

Examiner Only	
Marks	**Remark**
Total Question 4	

[Turn over

8165

5 **(a)** Name a quadrilateral with

   (i) two pairs of equal sides but no parallel sides,

   Answer ———————————— [1]

   (ii) only one pair of parallel sides.

   Answer ———————————— [1]
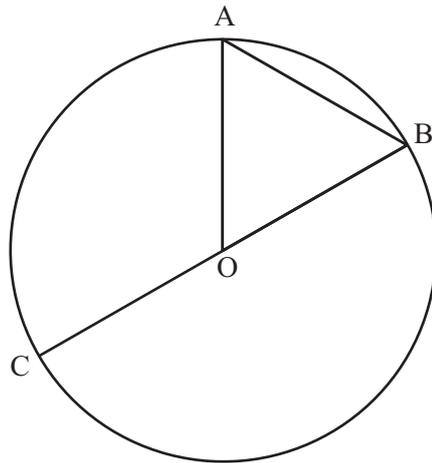
O is the centre of the circle.

(b) Complete the sentences

   (i) A, B and C are all points on the ——————————— of the circle. [1]

   (ii) The line OB is a ——————————— of the circle. [1]

   (iii) The straight line AB is a ——————————— of the circle. [1]

(c) Shade a segment of the circle. [1]

Total Question 5

8165

6 **(a)** Tom is reading a book which contains 96 pages.
He has read 25% of the book.
How many pages of the book has he read?

Answer _____ pages [2]

(b) Joan buys 9 scones costing 18p each.
What change should she receive from £5?

Answer £ _____ [2]

(c) Write this set of numbers in order of size.
Start with the smallest number.

        6,   –7,   –11,   3,   –5

Answer _____ , _____ , _____ , _____ , _____ [1]

(d) Write this set of numbers in order of size.
Start with the smallest number.

    0.74,   0.089,   0.8,   0.85,   0.803

Answer _____ , _____ , _____ , _____ , _____ [1]

Total Question 6

[Turn over

8165

7 Vicky recorded the types of drinks sold from a drinks machine.

Type of Drink	Frequency
Coffee	7
Tea	13
Hot Chocolate	6
Cola	5
Orange	3

(a) On the graph paper, draw a bar chart to show this information.

[3]

8165

(b) Which is the most popular type of drink?

Answer _____ [1]

(c) How many drinks did Vicky record altogether?

Answer _____ [1]

Total Question 7

[Turn over

24GMT1109

8 Sticks are used to make this pattern of shapes.

1   2   3

(a) Draw the 4th pattern and complete the table for the number of sticks.

Pattern Number	1	2	3	4
Number of Sticks	5	9	13	

[2]

(b) What pattern do you notice about the numbers in the "Number of Sticks" row?

Answer _____ [1]

(c) Find the number of sticks in the 9th pattern.

Answer _____ [2]

Total Question 8

8165

24GMT1110

9 **(a)** A shape is drawn on a centimetre square grid.

Work out the perimeter of the shape.   Answer _____ cm [1]

(b) This symmetrical solid is made up of centimetre cubes.
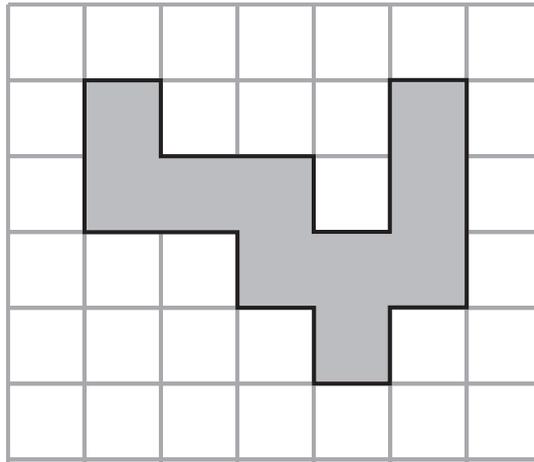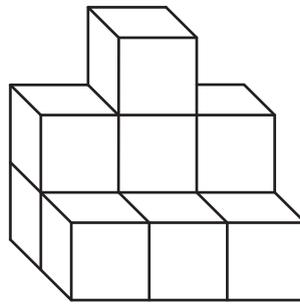
(i) What is the volume of the solid?   Answer _____ cm³ [1]

(ii) On the grid below draw the front elevation of the solid.

[2]
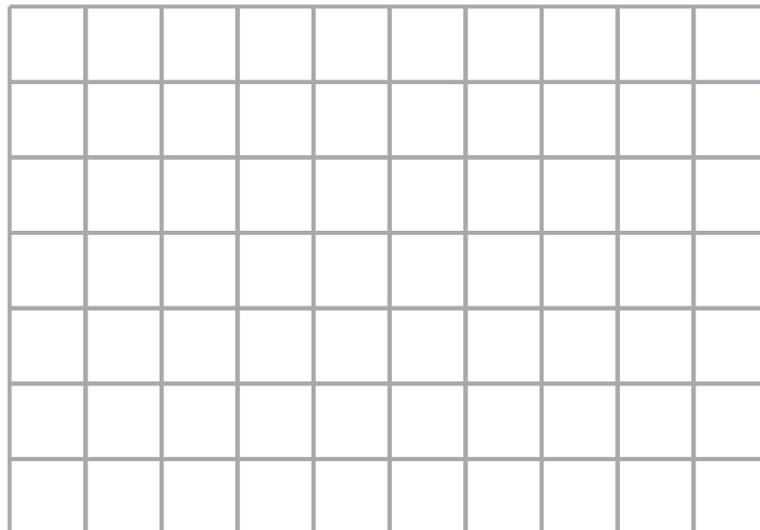
Total Question 9

[Turn over

8165

24GMT1111

10 (a) A large shopping mall consists of 380 shop units.

5% of the units are not occupied.

How many of the units are occupied?

Answer _____ shop units [3]

(b) Without using a calculator, multiply 274 by 29
Show your work.

[3]

8165

11 Nina spent two hours doing homework one evening.
The pie chart shows how the time was spread over four subjects.
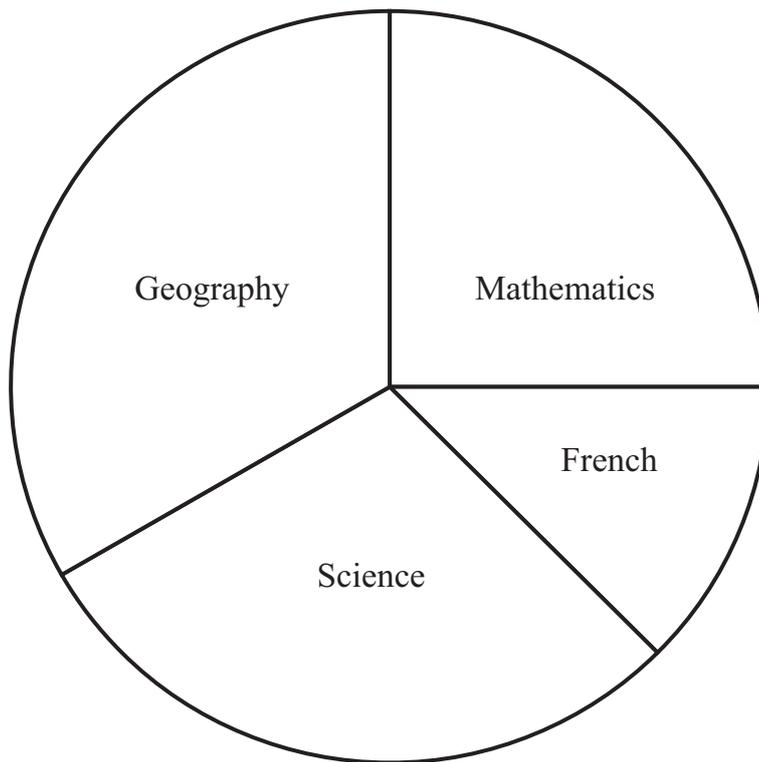
(a) How much time was spent on Mathematics?

Answer _____ minutes [1]

(b) Estimate the amount of time spent on Geography.

Answer _____ minutes [1]

(c) Measure the angle for Science.

Answer _____° [1]

Total Question 11

[Turn over

8165

24GMT1113

12 The number of newspapers sold each hour in a small shop was recorded.

| 35 | 23 | 22 | 14 | 17 | 19 | 21 | 25 |

What was the mean number of newspapers sold?

Answer _____ [3]

Total Question 12

13 A bookshelf is 2.5 m wide.
How many books each of width 18 mm can be stored on the shelf?

Answer _____ [3]

Total Question 13

8165

14 (a) The cash price for a table is £890

It can be bought on credit by paying a deposit of 10% of the cash price and 24 monthly payments of £39.50

How much more is paid for the table when it is bought on credit?

Answer £ _____ [4]

(b) (i) Explain what is meant by the cube of 5

Answer _____ [1]

(ii) Find the cube root of 64

Answer _____ [1]

(c) Work out the answer to the following, without using a calculator.
Show your work.

$$\frac{7}{12} - \frac{1}{6}$$

[2]

Total Question 14

[Turn over

8165

24GMT1115

15 (a) Calculate the volume of a cuboid of length 9 cm, width 8 cm and height 3 cm.

Answer ⎯⎯⎯⎯⎯⎯ [3]

(b) A cube has the same volume as the cuboid. Calculate the length of the side of the cube.

Answer ⎯⎯⎯ cm [2]

Total Question 15

8165

24GMT1116

16 (a)

diagram not drawn accurately

x

33°

L　　　　M　　　　N

In the diagram LMN is a straight line.

Calculate the size of the angle marked x.

Answer x = _____° [1]

(b)

R　　　　　T

diagram not drawn accurately

S

(i) What type of angle is the one marked at S?

Answer _____ [1]

(ii) Angle RST = 103°.
Calculate the size of the marked angle.

Total Question 16

Answer _____° [1]

[Turn over

8165

17 The number of crisps sold in a tuck shop was recorded as follows.

Flavour	Frequency	Angle
Salt and Vinegar	10	
Ready Salted	8	
Smokey Bacon	17	
Cheese and Onion	25	

Draw a pie chart to illustrate this information.

[4]

Total Question 17

8165

	Examiner Only
Marks	Remark

18 Which of the following fractions is nearest in size to $\frac{1}{4}$?

$$\frac{6}{25} \qquad \frac{13}{50} \qquad \frac{49}{200} \qquad \frac{97}{400}$$

Show your work.

Answer _____ [2]

Total Question 18

19 Construct a triangle ABC where AB is 8 cm, AC is 5 cm and angle A is 55°

A$^{\times}$

Total Question 19

[2]

[Turn over

8165

24GMT1119

20 Calculate $\dfrac{2}{0.5^2}$

Answer _____ [2]

Total Question 20

21

Timetable: Enniskillen Bus Centre – Omagh Bus Centre
Service 94 (Monday–Friday)

Calling points:								
Enniskillen, Bus Centre	...	0655	0735	0740	0905	1130	1330	1545
Mullaghmeen, Village	...	...	...	...	...	...	...	...
Ballinamallard, Church	...	0710	...	0755	0920	...	1345	1605
Trillick, Warnock's Shop	...	0720	0802	0805	0930	...	1355	1615
Irvinestown, Bypass	...	...	...	...	...	1200	...	...
Dromore (Tyrone), Bypass	0727	0730	...	0815	0940	1220	1405	1625
Prices Shop, near Dromore	...	0738	...	0823	0948	1225	1413	1633
Omagh, Bus Centre	0752	0752	...	0850	1005	1240	1430	1655

(a) The 0740 bus from Enniskillen is running 8 minutes late.
At what time will it arrive in Ballinamallard?

Answer _____ [1]

(b) A girl needs to be in Omagh for an appointment at 1.15 pm. She leaves
Enniskillen on the latest possible bus to be in time for her appointment.
How long will she have to spend in Omagh before the appointment?

Total Question 21

Answer _____ minutes [2]

8165

Quality of written communication will be assessed in this question.

22 The boys in Class 12A scored the following goals in a penalty competition:

$$6, \quad 10, \quad 9, \quad 8, \quad 7, \quad 6, \quad 7, \quad 10, \quad 9, \quad 8$$

The 8 boys in Class 12B scored a total of 72 goals.

Which class did better in the competition?
Explain your answer.

Answer _____

because _____

_____ [4]

Total Question 22

23 In a greengrocer's, cooking apples cost £2.65 per kg.
Mary buys 0.6 kg of cooking apples.
She also buys 0.4 kg of tomatoes.
At the checkout her bill for both items comes to £2.83
Work out the price **per kg** for the tomatoes.

Total Question 23

Answer £ _____ [4]

[Turn over

24 **(a)** Simplify

$$5y + 3y - 4y$$

Answer _____ [1]

(b) Solve

(i) $\dfrac{x}{3} = 9$

Answer $x =$ _____ [1]

(ii) $\dfrac{30}{x} = 6$

Answer $x =$ _____ [1]

_____

THIS IS THE END OF THE QUESTION PAPER

_____

Total Question 24

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