Surname	Centre Number	Candidate Number
First name(s)		0

GCSE

3300U10-1

A22-3300U10-1

MONDAY, 14 NOVEMBER 2022 – MORNING

MATHEMATICS
UNIT 1: NON-CALCULATOR
FOUNDATION TIER

1 hour 30 minutes

For Examiner's use only		
Question	**Maximum Mark**	**Mark Awarded**
1.	**6**	
2.	**2**	
3.	**2**	
4.	**5**	
5.	**2**	
6.	**2**	
7.	**2**	
8.	**3**	
9.	**3**	
10.	**2**	
11.	**3**	
12.	**2**	
13.	**2**	
14.	**2**	
15.	**3**	
16.	**4**	
17.	**3**	
18.	**3**	
19.	**3**	
20.	**2**	
21.	**2**	
22.	**2**	
23.	**5**	
Total	**65**	

ADDITIONAL MATERIALS

The use of a calculator is not permitted in this examination.

A ruler, a protractor and a pair of compasses may be required.

INSTRUCTIONS TO CANDIDATES

Use black ink or black ball-point pen. Do not use gel pen or correction fluid.

You may use a pencil for graphs and diagrams only.

Write your name, centre number and candidate number in the spaces at the top of this page.

Answer **all** the questions in the spaces provided.

If you run out of space, use the additional page at the back of the booklet. Question numbers must be given for all work written on the additional page.

Take π as 3·14.

INFORMATION FOR CANDIDATES

You should give details of your method of solution when appropriate.

Unless stated, diagrams are not drawn to scale.

Scale drawing solutions will not be acceptable where you are asked to calculate.

The number of marks is given in brackets at the end of each question or part-question.

In question **4**, the assessment will take into account the quality of your organisation, communication and accuracy in writing.

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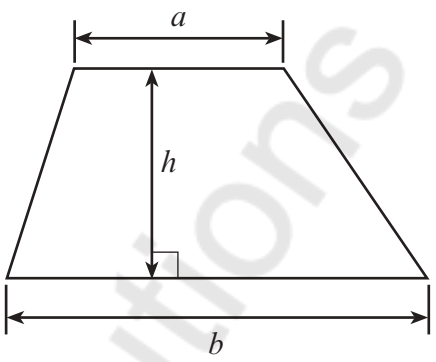
Formula List – Foundation Tier

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



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1. (a) Write the number sixty-three thousand and twenty-nine in figures. [1]

63029

(b) Write 2481 correct to the nearest 10. [1]

2480

(c) Multiply 291 by 7. [1]

$$\begin{array}{r} {}^{6} \\ 291 \\ \times \quad 7 \\ \hline 2037 \end{array}$$

(d) Subtract 513 from 842. [1]

$$\begin{array}{r} {}^{3}{}^{1} \\ 842 \\ -513 \\ \hline 329 \end{array}$$

(e) A number is multiplied by 4 and then doubled.
The answer is 56.

What is the number? [2]

$4 \times 2 = 56$

$4 \times = 28$

$\times = 28 / 4 = 7$

7

The number is .....

2. Write down the next number in each of the following sequences.

(a) 67, 73, 79, 85, ... [1]

91

(b) 103, 92, 81, 70, ... [1]

59

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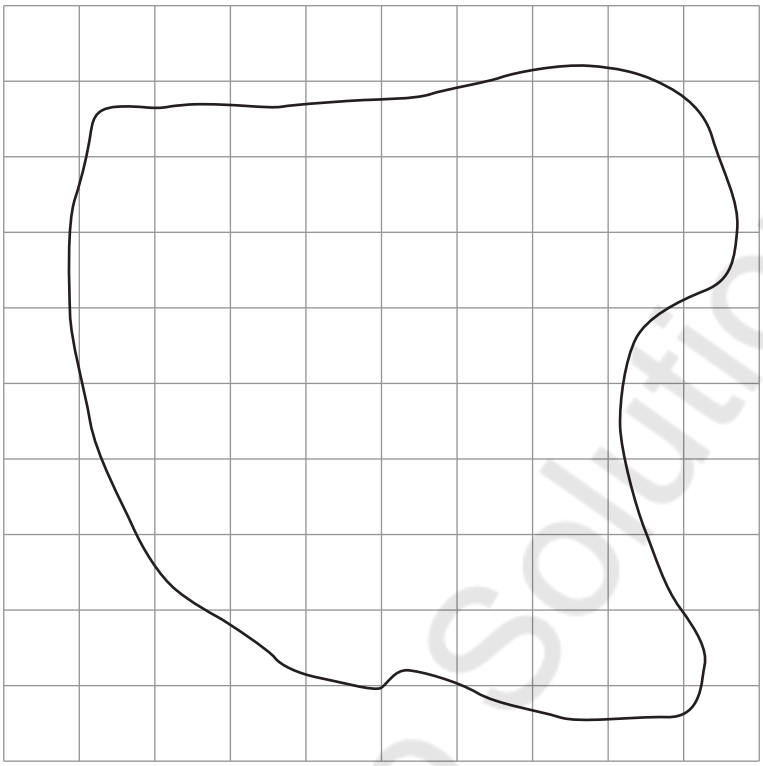
3.



The shape above has been drawn on a centimetre-square grid.

Estimate the area of the shape. [2]

59

Area of the shape = 59 cm^2

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4. *In this question, you will be assessed on the quality of your organisation, communication and accuracy in writing.*

A customer buys 7 identical small boxes and 3 identical large boxes from a shop.
The total cost of these boxes is £59.
Each small box costs £5.

How much does each large box cost?
You must show all your working. [3 + 2 OCW]

$7x + 3y = £59$

$(7 \times 5) + 3y = 59$

$35 + 3y = 59$

$3y = 59 - 35$

$\frac{3y}{3} = \frac{24}{3}$

$y = 8$

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5. Here is a list of eight numbers.

7 4 9 5 4 5 3 4

(a) What is the range of these eight numbers? [1]

3 4 4 4 5 5 7 9

Range = 6

(b) What is the mode of the eight numbers listed above?
Circle the correct answer. [1]

3 (4) 5 7 9

6. (a) Write these numbers in order, starting with the smallest number. [1]

−2 −5 4 0

−5	−2	0	4
smallest			biggest

(b) Write these numbers in order, starting with the smallest number. [1]

3·78 3·91 3·69 3·8

3.69	3.78	3.8	3.91
smallest			biggest

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7. Mary has 6 oranges and 11 apples in a bag.
She chooses one piece of fruit from the bag at random.

What is the probability that Mary chooses an apple? [2]

$6+11=17$ ∴ $11/17$

8.

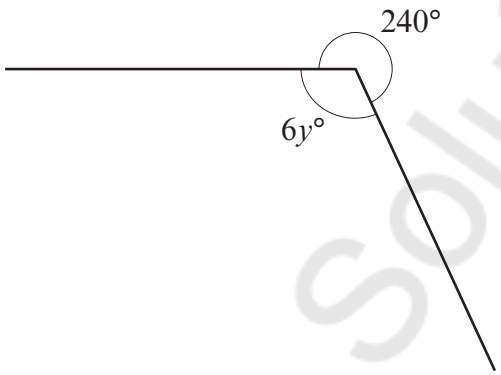

Diagram not drawn to scale

Calculate the value of y. [3]

$360-240=6y$

$120=6y$

$y=120/6=20$

$y =$ 20

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9. A car passes through four places in the following order: Aber, Berw, Ceiro and Dinas.
The car passes through Aber, Berw and Ceiro at the times shown in the table below.

Place	Time
Aber	13:30
Berw	14:40
Ceiro	16:30
Dinas	

The time taken to travel from Aber to Berw is **twice** the time taken to travel from Ceiro to Dinas.

At what time does the car pass through Dinas?
You must show all your working. [3]

A → B 14:40 − 13:30
= 1:10 = 70m
C → D = ½ × 70mins
= 35
35 + 16:30
= 17:05

10. Solve the following equations.

(a) $11k = 99$ [1]

$11k = 99$
$k = 99 \div 11$
$= 9$ //

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(b) $18 - p = 6$ [1]

$18 - 6 = P$

$P = 12$ //

11. Use a ruler and a protractor to make an accurate drawing of this triangle in the space below. [3]

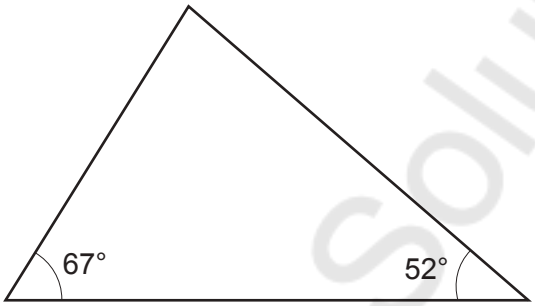

Diagram not drawn to scale

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12. Using only the numbers in the following list,

31 33 35 37 39 41 43

find

(a) the multiple of 5·5, [1]

$31 \div 5.5 = 5.6$

$33 \div 5.5 = 6$

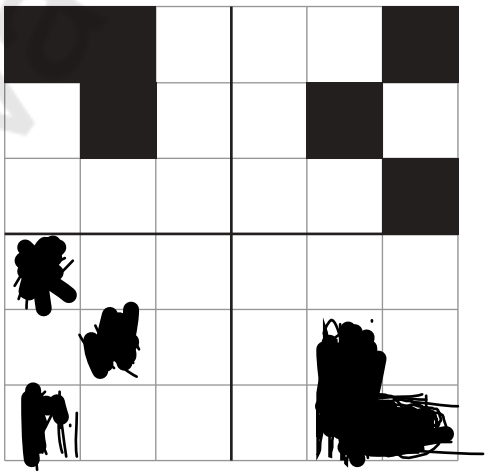
The multiple of 5·5 is 33

(b) the factor of 111. [1]

1, 3, 37, 111

The factor of 111 is 37

13. Shade the least number of squares so that the grid has rotational symmetry of order 2.
The squares you shade must be in the lower two quadrants. [2]



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14. Two friends, Geraint and Dyfrig, are having a discussion.

(a) Geraint says,

"All prime numbers are odd numbers."

Explain why Geraint is incorrect. [1]

1 2 3 5

(b) Dyfrig says,

"All cube numbers are odd numbers."

Explain why Dyfrig is incorrect. [1]

$1^3 = 1 \cdot 2^3 = 8 \cdot 3^3 = 27$

$4^3 = 64$

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15. Andrew and Grace each have some £10 notes and £5 notes.
Andrew has 6 notes. The total value of Andrew's notes is £55.
Grace has 5 notes. The total value of Grace's notes is £35.

How many £10 notes do they have in total?
How many £5 notes do they have in total? [3]

A
$x+y=5$
$(10\times x)+(5\times y)=55$
$5£10+1£5$

G
$10x+5y=35$
$10\times2+5\times3$
$2£10+3£5$

Total number of £10 notes = 7 Total number of £5 notes = 4

16. (a) Solve the equation $7p-3=60$. [2]

$7p-3=60$
$7p=60+3$
$p=63/7=9$

(b) Simplify the expression $6a-7b-2a-8b$. [2]

$6a-2a-7b-8b$
$4a-15b$

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17. In a restaurant, as part of a Set Meal, customers must choose a starter, main course and dessert from the options below.

Set Meal		
Starter	**Main Course**	**Dessert**
Melon (M) or Soup (S)	Chicken (C) or Ham (H) or Pizza (P)	Fruit (F) or Yoghurt (Y)

List all the possible different combinations of starters, main courses, and desserts that the restaurant offers.
One has been done for you. [3]

Set Meal		
Starter	**Main Course**	**Dessert**
M M M M S S S S	C C H P P C H H P	F Y Y Y Y F F Y Y

Examiner only

18. There are five numbers in a list.
The mean of the five numbers is 7.
Another number is added to the list.
The mean of these six numbers is 8·5.

Find the value of the sixth number.
You must show all your working. [3]

5: $7 \times 5 = 35$
6: $8.5 \times 6 = 57$
6th no $= 57 - 35$
$= 16$

19. A sum of money is shared in the ratio 1 : 8.
The **larger** share is £16.80.
What is the total amount of money shared?
You must show all your working. [3]

$1 : 8$
$x : 16.80$
$8x : 1x$
$8x = 16.80$
$x = \frac{16.80}{8}$
$= 2.10$

$1x + 8x$
$= 9x$
9×2.10
$= 18.90$
£18.90

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20. Estimate the value of $\frac{20 \cdot 4 \times 59 \cdot 1}{407}$.

You must show all your working. [2]

$\frac{20 \times 59}{400} = \frac{59}{20}$

$5 \cdot 9 / 2 = 2 \cdot 95$

21. The nth term of a sequence is given by $3n - 13$.

Write down the value of

(a) the 10th term, [1]

$(3 \times 10) - 13$

$= 17$

(b) the 4th term. [1]

$(3 \times 4) - 13$

$= -1$

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22. Samira has a dice. Its faces are numbered 1 to 6.
She wants to know whether her dice is biased or not.
Samira rolled this dice 300 times.
Her results are shown in the table below.

Number shown on dice	1	2	3	4	5	6
Frequency	65	40	52	10	23	110

The relative frequency of throwing a 5 is $\frac{23}{300}$.

What is the relative frequency of throwing a 2?
Give your answer as a fraction in its simplest form. [2]

$\frac{40}{300} = \frac{2}{15}$

15

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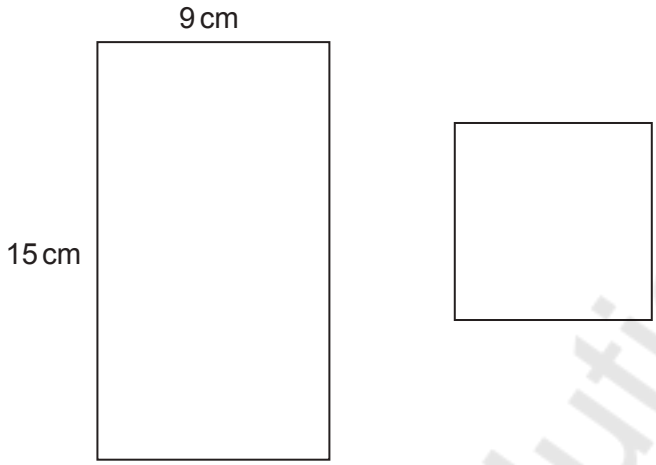
23. A rectangle and a square are shown below.



Diagrams not drawn to scale

The total area of the two shapes is 184 cm^2.
Find the **perimeter** of the square. [5]

$15 \times 9 = 135 cm^2$

$184 - 135 = 49 cm^2$

$Area = L^2$

$49 = L^2$

$L = \sqrt{49}$

$= 7$

$7 \times 4 = 28 cm$

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Question number	Additional page, if required. Write the question number(s) in the left-hand margin.

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