Surname	Centre Number	Candidate Number
First name(s)		0

GCSE

3310U10-1

A23-3310U10-1

TUESDAY, 7 NOVEMBER 2023 – MORNING

MATHEMATICS – NUMERACY
UNIT 1: NON-CALCULATOR
FOUNDATION TIER

1 hour 30 minutes

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** questions.

Write your answers in the spaces provided in this booklet. If you run out of space, use the additional page(s) at the back of the booklet, taking care to number the question(s) correctly.

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 **3**(c), the assessment will take into account the quality of your linguistic and mathematical organisation, communication and accuracy in writing.

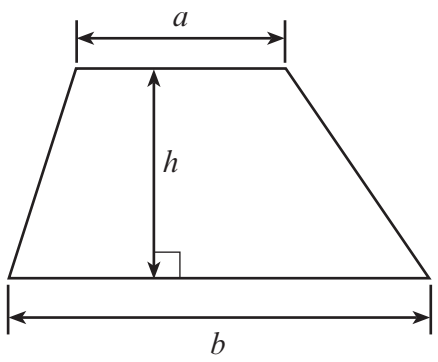
For Examiner's use only		
Question	**Maximum Mark**	**Mark Awarded**
1.	**7**	
2.	**10**	
3.	**12**	
4.	**3**	
5.	**4**	
6.	**7**	
7.	**9**	
8.	**8**	
9.	**5**	
Total	**65**	

3310U101
01

NOV233310U10101

Formula List – Foundation Tier

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



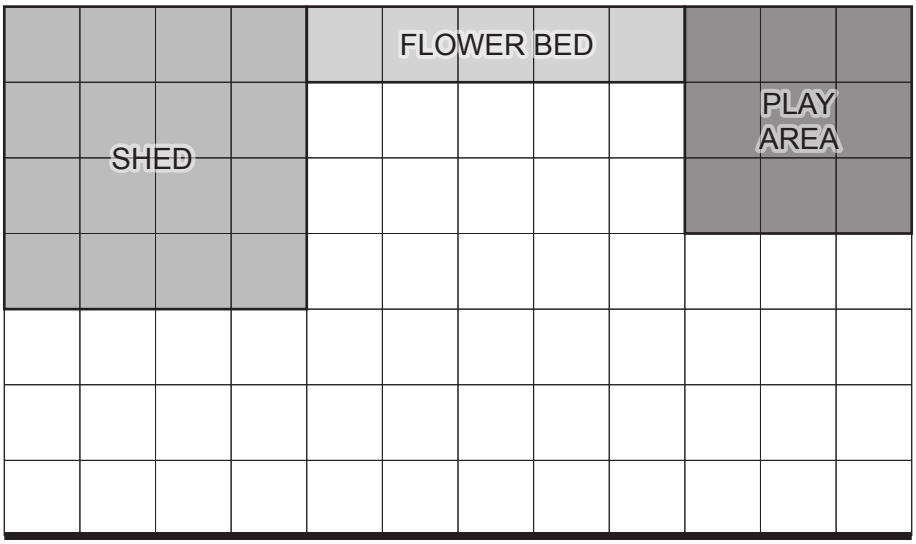
BLANK PAGE

PLEASE DO NOT WRITE ON THIS PAGE

Examiner only

1. The scale drawing below shows a plan of Amir's garden.
It shows the position of the shed, flower bed, play area and the back of the house.

Scale: 1 cm represents 1 m



BACK OF THE HOUSE

(a) Amir wants to put a hot tub in his garden.

The base of Amir's hot tub is rectangular.
It is 3 m long and 2 m wide.

(i) Amir wants the rectangular hot tub to be:
- at least 2 m from the back of the house
- at least 1 m from everything else.

Draw a possible position for the hot tub on the scale drawing above. [2]

.....

.....

(ii) What is the area of the base of the hot tub?
Circle your answer. [1]

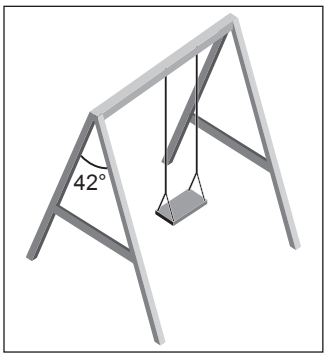
$6\,m^2$ 6 m $5\,m^2$ 10 m $10\,m^2$

.....

Examiner only

(b) Amir is building a swing for the play area.

The 2 long posts that meet at the top at each end of the swing need to be at an angle of 42°.



(i) What type of angle is 42°?
Circle your answer. [1]

an acute angle a right angle a straight line an obtuse angle a reflex angle

(ii) Amir is joining 2 long posts together.
One post is lying on horizontal ground.
Draw an angle of 42° at point T. [1]

T

(iii) Each long post makes an angle of 69° with the horizontal ground.
The diagram below shows one of these posts.
Calculate the size of angle x. [2]

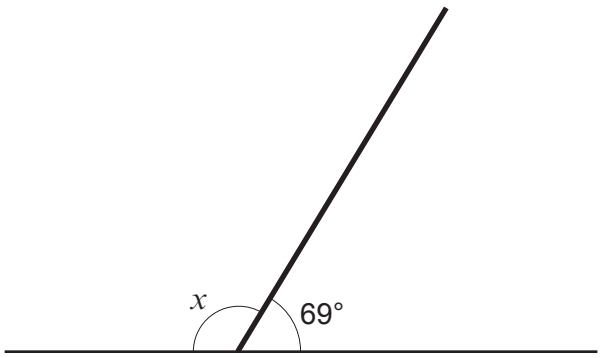


Diagram not drawn to scale

.....

.....

Examiner only

2. A website lists the number of passengers who used UK airports in 2018.

(a) The table below shows some of these numbers.
They have been rounded to the nearest million.
One of the numbers is also represented in the pictogram below.

Airport	Number of passengers (to the nearest million)
Cardiff	.....
Bristol	9 000 000
Birmingham	.....
Exeter	.....
Leeds-Bradford	4 000 000

Key: ⊕ represents 4 000 000 passengers

Airport	
Cardiff	
Bristol	⊕ ⊕ ◔
Birmingham	
Exeter	
Leeds-Bradford	

In the table:

- the number of passengers who used Cardiff was 50% of the number of passengers who used Leeds-Bradford
- the number of passengers who used Birmingham was 3 times the number of passengers who used Leeds-Bradford
- the number of passengers who used Exeter was $\frac{1}{4}$ of the number of passengers who used Leeds-Bradford.

Complete the table **and** the pictogram. [6]

.....

.....

.....

.....

.....

Examiner only

(b) In 2018, approximately eighty million passengers used Heathrow airport.

(i) The number of passengers who used Gatwick airport in 2018 was 46 086 089.
Chris said:

"Gatwick had more than half the number of passengers that Heathrow had."

Is Chris correct?
Give a reason for your answer. [1]

Yes ☐ No ☐

.....

.....

.....

(ii) On the busiest day, two hundred and sixty-one thousand nine hundred and nine passengers used Heathrow airport.
Write this number using digits. [1]

.....

.....

(c) A plane flying from the UK to Corfu used 2508 litres of fuel per hour.
The flight was 3 hours long.
How many litres of fuel did the plane use? [2]

.....

.....

.....

3310U101
07

Examiner only

3. Luca always has his eyes tested at the local optician.

(a) He needs to have an eye test in December.

- Luca works from Monday to Saturday every week.
- Luca can only go for an eye test after he finishes work at 4 p.m.
- Luca cannot go for an eye test on a Tuesday or Friday.
- The local optician does not open on Wednesday afternoon or Saturday afternoon.
- The local optician is closed every Sunday and on 25th and 26th December.

The calendar below is for December 2023.

December 2023						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

What is the latest possible date in December that Luca could have his eye test? [2]

.....

.....

.....

.....

The latest date that Luca could have his eye test is ..... December

(b) Luca last had his eyes tested in 2021.
In 2021, Luca was given the strength of his left eye and the strength of his right eye.
He compares these strengths with those from 2019.

	Left eye strength	Right eye strength
2019	+0·75	+1·50
2021	+1·25	+2·25

Examiner only

Which eye changed the most between 2019 and 2021?
You must show working to support your answer. [2]

Left ☐ Right ☐

.....

.....

.....

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

These are the costs of Luca's eye test and glasses:
- £32 for the eye test
- £84 for the frames
- £39 for the lenses.

The optician gave Luca a discount voucher.
With the voucher, Luca gets:
- 25% off the cost of the eye test
- $\frac{1}{3}$ off the cost of the frames.

Calculate the total amount that Luca has to pay.
You must show all your working. [6 + 2 OCW]

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

3310U1101
09

Examiner only

4. The table below shows Katie's assessment results.

Subject	Maths	English	History	PE
Result	65%	$\frac{6}{10}$	$\frac{43}{50}$	80%

Katie wants to compare her results by putting them in order.

By completing the table below, put Katie's assessment results in order from lowest to highest. You must show working to support your answer. [3]

.....

.....

.....

.....

.....

.....

	Lowest → Highest			
Subject				
Result				

BLANK PAGE

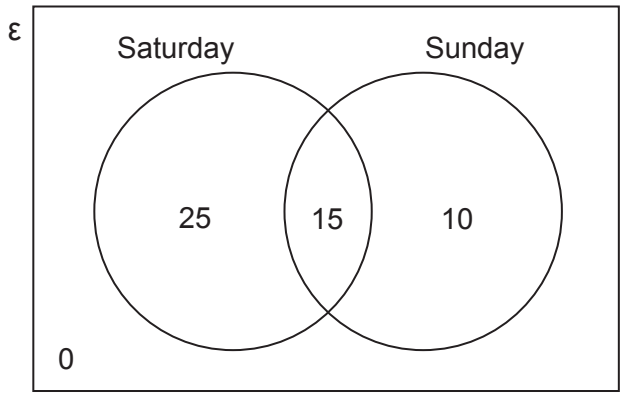
PLEASE DO NOT WRITE ON THIS PAGE

Examiner only

5. Delyth buys 50 tickets for a group of friends to go to a music festival.
The ticket prices are given below.

Ticket for	Ticket price per person
Saturday only	£20
Sunday only	£17
Both days	£28

The Venn diagram below shows the number of tickets that Delyth buys.



Calculate the total cost of the 50 tickets.
You must show all your working. [4]

.....

.....

.....

.....

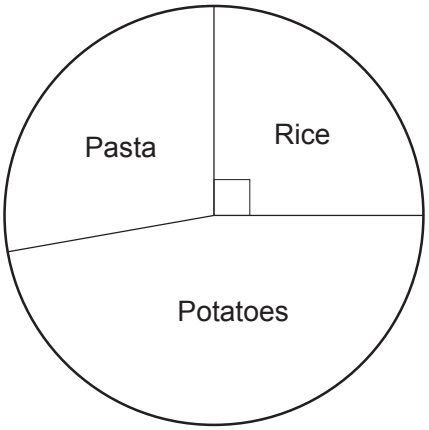
.....

.....

Total cost of the 50 tickets is £ .....

Examiner only

6. In a survey, 540 people were asked if they preferred pasta, rice or potatoes.
They were asked to choose just one preference.
The results are displayed in the accurately-drawn pie chart below.



(a) How many people preferred rice? [2]

.....

.....

..... people

(b) The sector for potatoes on the pie chart is to be split.
40% of the people who chose potatoes said they preferred chips.

What will be the size of the angle in the sector for **chips**?
You must show all your working. [3]

.....

.....

.....

.....

..... °

(c) 540 people took part in the survey. $\frac{7}{10}$ of these people were children.
How many people who took part in the survey were **not** children? [2]

.....

.....

.....

Number of people who were **not** children .....

Examiner only

7. (a) Tomos uses the recipe below to make mushroom risotto.
This recipe serves 4 people.

Mushroom Risotto serves 4 people

400 g mushrooms
8 spring onions
25 g butter
200 g rice
1 litre stock
50 g cheese

(i) How many **kilograms** of rice would Tomos need to make mushroom risotto for 48 people? [2]

.....

.....

.....

.....

..... kg of rice

(ii) Write the ratio of the quantities of butter to rice to cheese in its simplest form. [2]

.....

.....

butter : rice : cheese = ... : ..... : .....

Examiner only

(b) The table below shows the amount of nutrition in one serving of mushroom risotto.

Nutrition per serving					
Fat	Carbohydrates	Sugars	Fibre	Protein	Salt
15 g	37 g	6 g	5 g	14 g	1 g

(i) A serving of mushroom risotto gives $\frac{1}{6}$ of the maximum amount of salt recommended per day for anyone aged 11 or older.

What is the maximum amount of salt recommended per day for anyone aged 11 or older?
Circle your answer. [1]

1 g 5 g 6 g 10 g 60 g

.....

(ii) The formula below gives the daily recommended mass of protein.

Mass of protein in **grams** = 0·8 × body mass in kg

Tomos has a body mass of 70 kg.
What **percentage** of his daily recommended mass of protein is there in one serving of mushroom risotto? [4]

.....

.....

.....

.....

.....

.....

.....

.....

Examiner only

8. (a) Rita gives some money to charity.
She decides to share this money between 3 different charities.

Rita gives $40 to a children's charity.
This is $\frac{1}{5}$ of the total amount of money she gives to the 3 charities.

Rita gives $\frac{1}{4}$ of the total amount of money to an animal charity.

She gives the remaining money to a medical research charity.
Calculate how much money Rita gives to the medical research charity.
You must show all your working. [5]

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

Examiner only

(b) Last year, Rita's total income before tax was $30 000.

No income tax was payable on any income below $10 000.
Income tax had to be paid at a rate of 22% on any income between $10 000 and $30 000.

How much income tax did Rita pay last year? [3]

.....

.....

.....

.....

.....

Examiner only

9. The map below shows part of South West Wales.

(a) Find the bearing of St Brides from Fishguard. [1]

..... °

.....

(b) The distance by road from Haverfordwest to Milford Haven is 12 km.

(i) Estimate the distance by road from Haverfordwest to Fishguard. [1]

.....

..... km

Examiner only

(ii) Owain has a **different** map that has a scale of 1 : 25000.

Owain measures the distance by road from Haverfordwest to Milford Haven on his map.
Complete Owain's statement below.

"On my map, the distance by road from Haverfordwest to Milford Haven is represented by a length of ..... cm." [3]

.....

.....

.....

.....

.....

.....

END OF PAPER

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

Examiner only