Surname	Centre Number	Candidate Number
First name(s)		0

GCSE

3310U10-1

S24-3310U10-1

THURSDAY, 9 MAY 2024 – 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** 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 **1**(a), 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.	**19**	
2.	**10**	
3.	**4**	
4.	**6**	
5.	**3**	
6.	**5**	
7.	**3**	
8.	**3**	
9.	**12**	
Total	**65**	

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01

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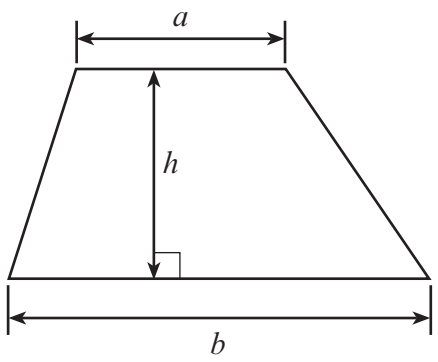
Formula List – Foundation Tier

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



Examiner only

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

Stuart, Annelise and their children like to keep fit.

The table below shows the prices of different membership types at a local fitness club.

Type of Membership	Price per year
Adult	£380
Senior (aged 60 or over)	£260
Junior (aged 16 or under)	£170
Family (2 adults and 2 juniors)	£920

Stuart and Annelise are both aged 42.
They have a son aged 14 and a daughter aged 12.
They all want to buy membership of the fitness club for a year.

How much less will the family pay in total by having a Family membership instead of a separate membership for each person?
You **must** show all your working. [4 + 2 OCW]

3310U101
03

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(b) The table below gives the number of calories used in one minute when exercising on the gym equipment shown.

Equipment		Calories used in one minute
Rowing machine		11 calories
Exercise bike		14 calories
Treadmill		17 calories
Cross trainer		12 calories

(i) Stuart uses the rowing machine for 20 minutes.
How many calories will he use? [2]

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(ii) Annelise uses the cross trainer.
How many minutes does it take her to use 360 calories? [2]

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Examiner only

(c) When Stuart uses the exercise bike, he keeps his upper body at an angle of 45° to the horizontal.

What type of angle is an angle of 45°?
Circle your answer. [1]

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

(d) The fitness club keeps weekly information about the number of people who attend different fitness classes.

The table below shows the information for the first week of April.

Fitness Class	Number of people
Spin	62
Step	96
Yoga	84
Circuits	88
Zumba	57

Annelise thinks that the modal fitness class is yoga.
Is she correct? [1]

Yes ☐ No ☐

Give a reason for your answer.

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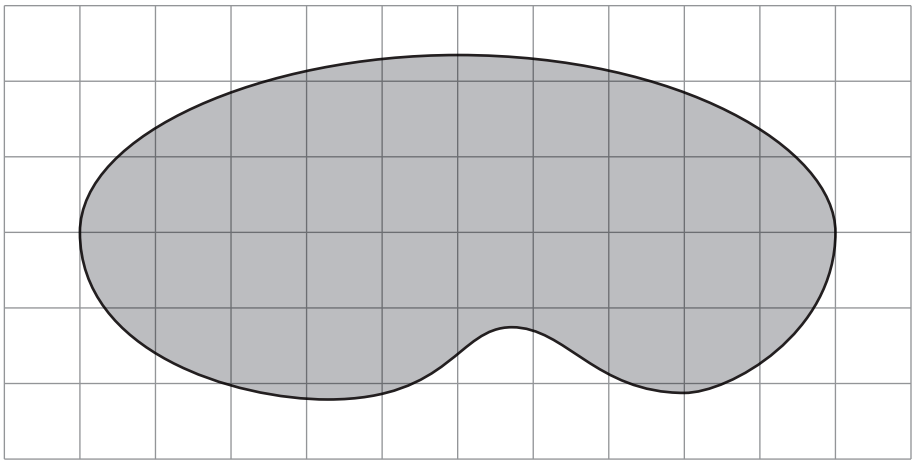
Examiner only

(e) The fitness club wants to lay tiles on the bottom of the swimming pool.
The outline of the bottom of the pool is drawn to scale on the square grid below.
The scale of the drawing is 1 cm represents 1 m.

Scale: 1 cm represents 1 m



The tiler will charge £30 per square metre for laying the tiles.
How much will the tiler charge in total for laying the tiles? [4]

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Examiner only

(f) The tiler has a small van.

The diagram below is a **scale drawing** of the van.
The scale of the drawing is 1 cm represents 50 cm.

Find the actual length of the van in metres. [3]

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Length of the van = ... metres

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2. (a) Beth and her 3 friends Nadia, Jodie and Saskia organise a 3-day holiday. They plan to go to Llandudno during the spring or summer of 2025.

They know the following:

- Nadia cannot be away during May or July,
- Beth cannot be away on Saturday or Sunday,
- Saskia cannot be away during the school holidays,
- Jodie cannot be away on the last 3 Tuesdays of each month **or** the first 2 Fridays of each month.

The calendar shown below is for the spring and summer months of 2025.

The school holidays are represented by ▭.

What would be the **latest dates** when they could all go for a 3-day holiday? [3]

MARCH 2025						
Su	**M**	**Tu**	**W**	**Th**	**F**	**Sa**
						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					

APRIL 2025						
Su	**M**	**Tu**	**W**	**Th**	**F**	**Sa**
		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			

MAY 2025						
Su	**M**	**Tu**	**W**	**Th**	**F**	**Sa**
				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

JUNE 2025						
Su	**M**	**Tu**	**W**	**Th**	**F**	**Sa**
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					

JULY 2025						
Su	**M**	**Tu**	**W**	**Th**	**F**	**Sa**
		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		

AUGUST 2025						
Su	**M**	**Tu**	**W**	**Th**	**F**	**Sa**
					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						

The dates for the 3-day holiday are:

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Examiner only

(b) For the holiday, the 4 friends will only be staying in Llandudno for 2 nights.
They have a choice between staying in an apartment or in a hotel.

Pier Apartment	Promenade Hotel
2-bedroom apartment Sleeps 4 people £250 for 1 night *10% off the total for any 2-night bookings*	Twin room (room for 2 people) £110 per room per night

Find the difference between the **total** cost of staying at the Pier Apartment and the **total** cost of staying at the Promenade Hotel for the 2 nights. [5]

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(c) Saskia is going to make a cake to take with them on holiday.
The top of the cake will be a rectangle of length 24 cm and width 15 cm.
Saskia has enough icing to cover 320 cm^2.
Will this be enough icing to cover the top of the cake?

Yes ☐ No ☐

You must show all your working. [2]

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Examiner only

3. Dafydd always makes Sunday lunch for his family.
This Sunday he is going to cook a turkey.

The instructions for the total time for cooking a turkey are:

Total time	=	30 minutes at 220°C	+	50 minutes per kilogram at 170°C	+	Leave for 15 minutes before serving

Dafydd is cooking a 3 kilogram turkey.
He wants to serve it at 2 p.m.
What is the latest time that Dafydd should start the cooking?
You must show all your working. [4]

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Examiner only

4. (a) Identical toothbrushes are sold in packs of 3 or 5.

A pack of 3 toothbrushes costs £1.44.
A pack of 5 toothbrushes costs £2.25.

Which pack of toothbrushes offers better value for money?
You must show all your working. [3]

(b) 75 ml tubes of toothpaste cost 93p each.

100 ml tubes of toothpaste offer the **same** value for money.

Calculate the cost of a 100 ml tube of toothpaste. [3]

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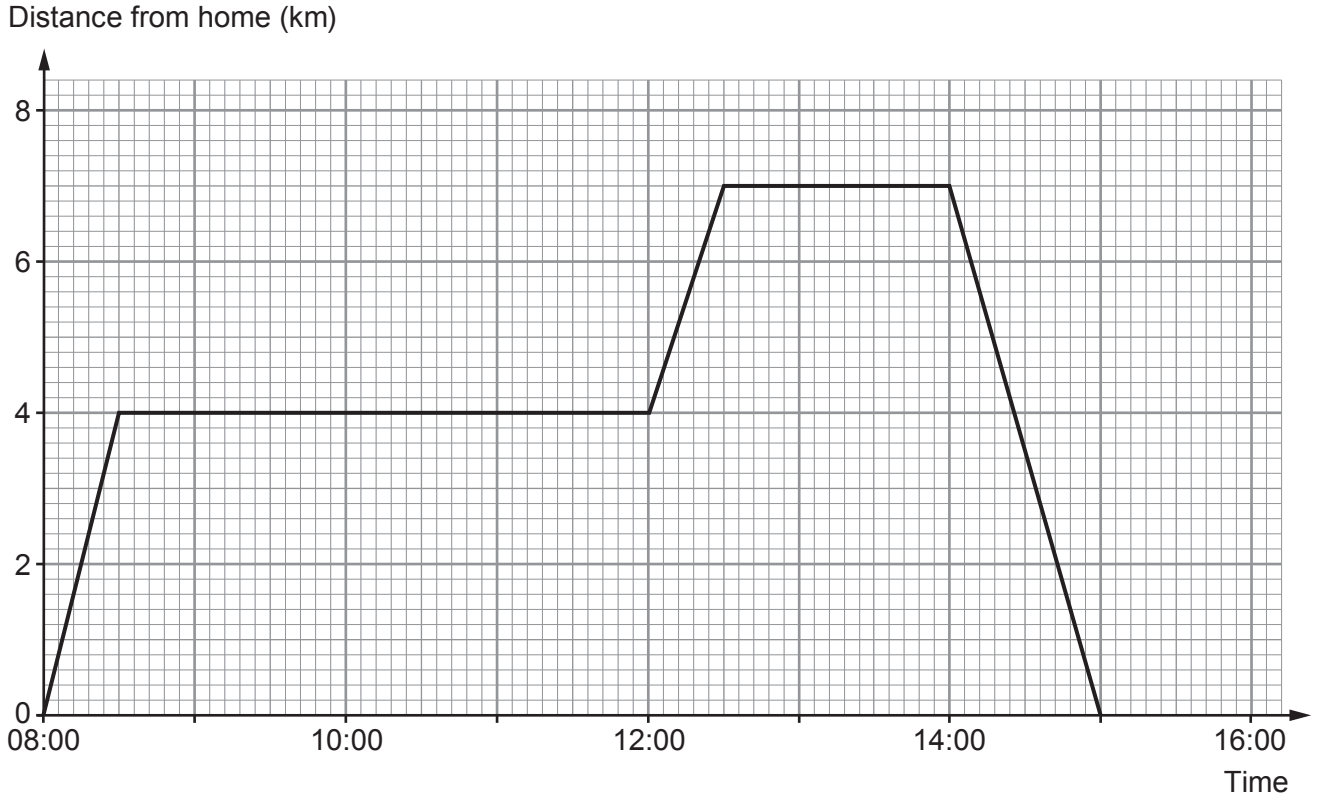
5. On Tuesday, Alfred travelled on a straight road.
The graph represents his journey during the day, until the time he arrived home.



(a) At what time did Alfred arrive home on Tuesday? [1]

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(b) How far, in total, did Alfred travel during the day on Tuesday? [1]

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(c) During which part of the day did Alfred travel at an average speed of 6 km per hour?
Circle your answer. [1]

08:00 to 08:30 08:30 to 12:00 12:00 to 12:30

12:30 to 14:00 14:00 to 15:00

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Examiner only

6. Erin owns a small shop.
Last year, Erin's income from her shop was 26 000 euros.
Erin had to pay tax on all of this income.
She paid 20% tax on the first 15 000 euros of this income.
She paid 30% tax on the rest of this income above 15 000 euros.

Calculate how much tax Erin paid in total.
You must show all your working. [5]

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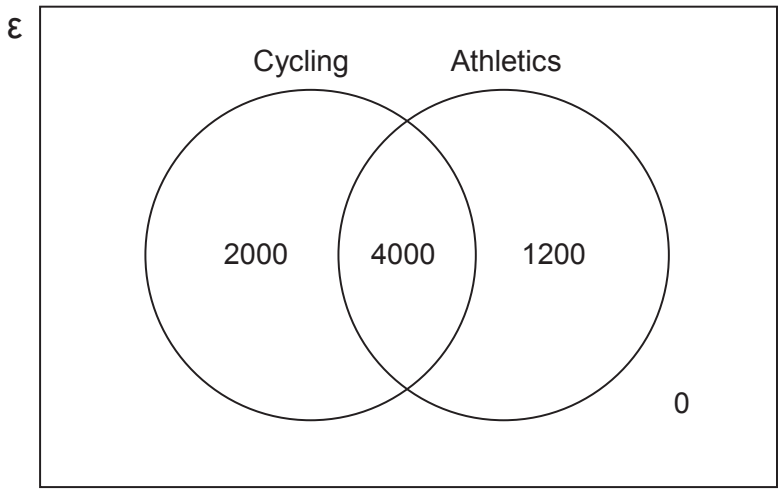
Examiner only

7. At a sports event there were 7200 spectators.
These spectators watched cycling, athletics, or both.
The entrance fees for the events were as follows.

Events	Entrance fee
Cycling only	£25
Athletics only	£30
Joint entry to both cycling and athletics	£40

The Venn diagram shows the number of tickets bought for the different events.



Calculate the total amount taken in entrance fees from the 7200 spectators.
You must show all your working. [3]

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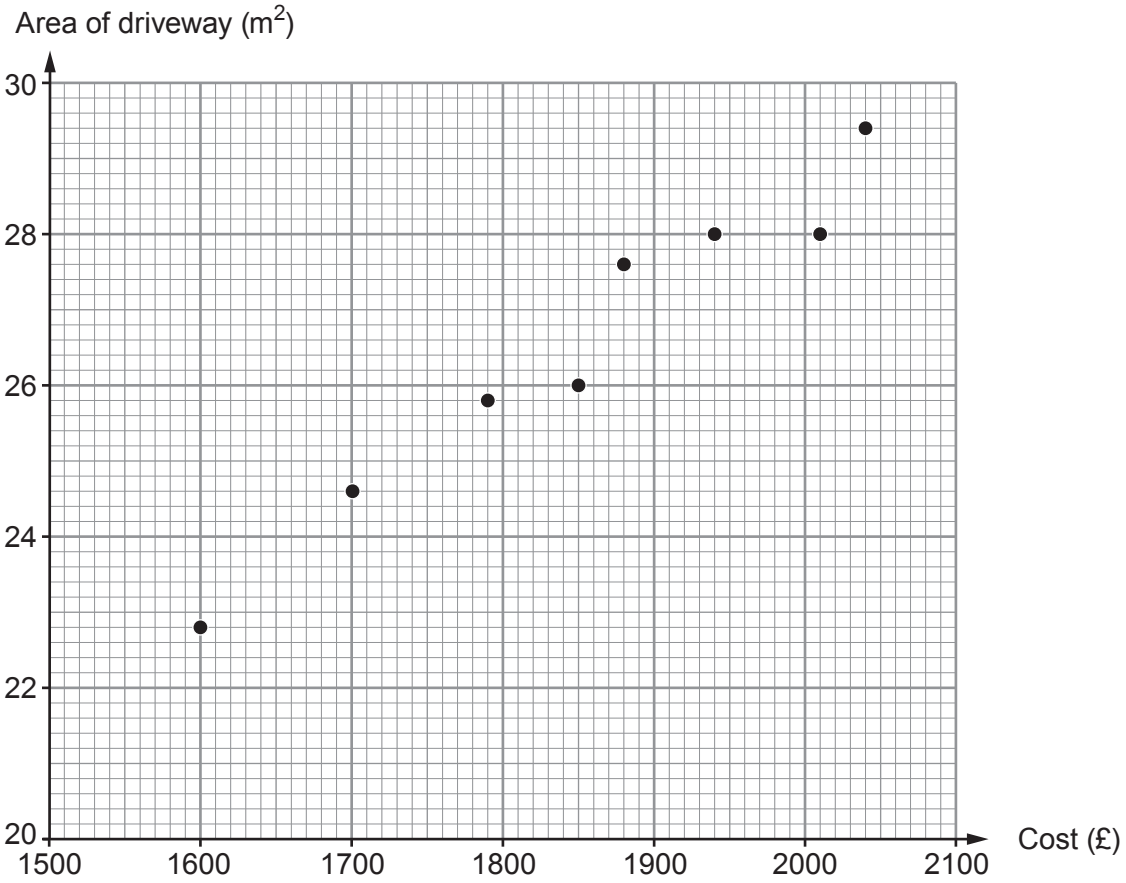
Examiner only

8. Some houses in a village have new driveways laid by DriveDown.
The scatter diagram shows the area and cost of each driveway.



(a) Two of these houses have the same area of driveway.
Calculate the difference in the cost of the new driveway for these two houses. [2]

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(b) Another house in the village has a driveway of area $25\,m^2$.
Estimate the cost of having a new driveway laid by DriveDown for this house. [1]

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Examiner only

9. (a) Siôn has an ice cream van.

On Monday, Siôn sold three times as many ice creams as cold drinks.
He sold 50 cold drinks on Monday.
Siôn sells ice creams for £1.80 each.

Calculate the amount of money Siôn took from selling ice creams on Monday. [4]

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(b) Siôn keeps ice cream in a freezer in his van.
Every hour he checks the temperature in his freezer.
He turns on his freezer at 8 a.m.
The readings he takes from 8 a.m. to 3 p.m. are listed below.

10°C 2°C –5°C –12°C –12°C –12°C –13°C –14°C

(i) Calculate the mean of these temperatures. [3]

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(ii) At 4 p.m. the temperature in Siôn's freezer was recorded as –16°C.
Calculate the mean of the temperatures recorded in Siôn's freezer from 8 a.m. to 4 p.m. [2]

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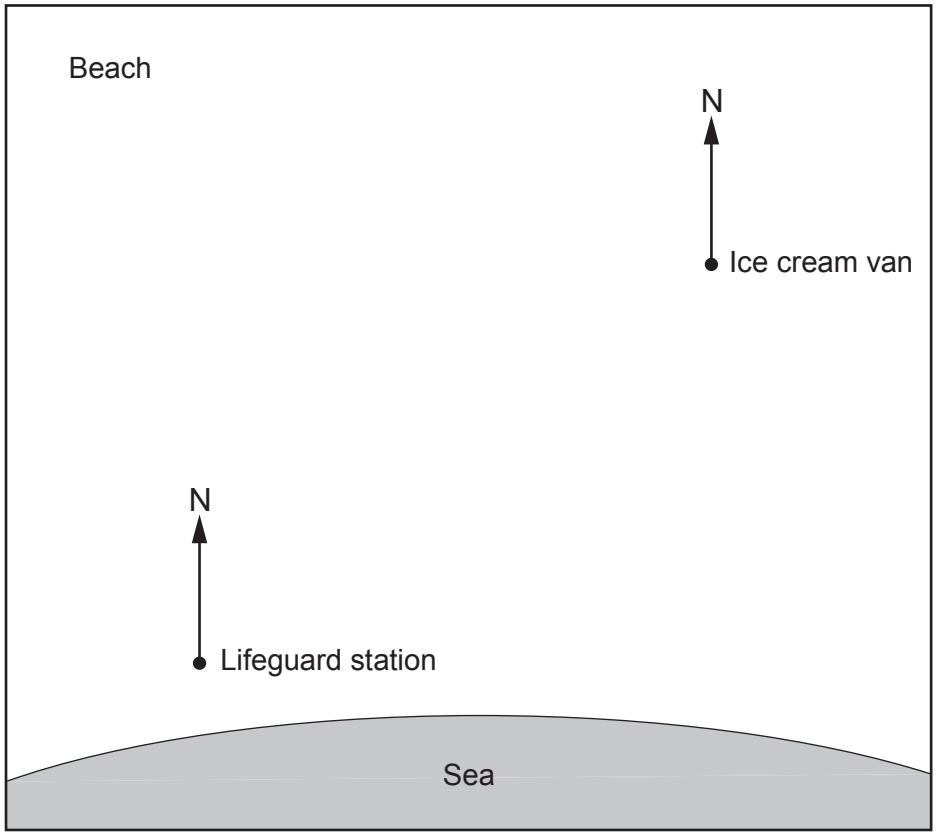
Examiner only

(c) Siôn parks his ice cream van on the beach, as shown on the map below.

Scale: 1 cm represents 20 metres



(i) How far is Siôn's ice cream van from the lifeguard station? [2]

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..... metres

(ii) Complete the following statement.

'The bearing of the lifeguard station from Siôn's ice cream van is .....°.' [1]

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END OF PAPER

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

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