Surname	Centre Number	Candidate Number
Other Names		0

GCSE

3310U10-1

A18-3310U10-1

MATHEMATICS – NUMERACY
UNIT 1: NON-CALCULATOR
FOUNDATION TIER

TUESDAY, 6 NOVEMBER 2018 – MORNING

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 continuation page at the back of the booklet. Question numbers must be given for the work written on the continuation 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 **3***(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.	**5**	
2.	**6**	
3.	**15**	
4.	**5**	
5.	**7**	
6.	**7**	
7.	**6**	
8.	**3**	
9.	**11**	
Total	**65**	

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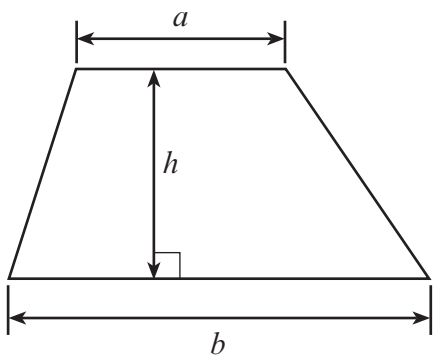
Formula List - Foundation Tier

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



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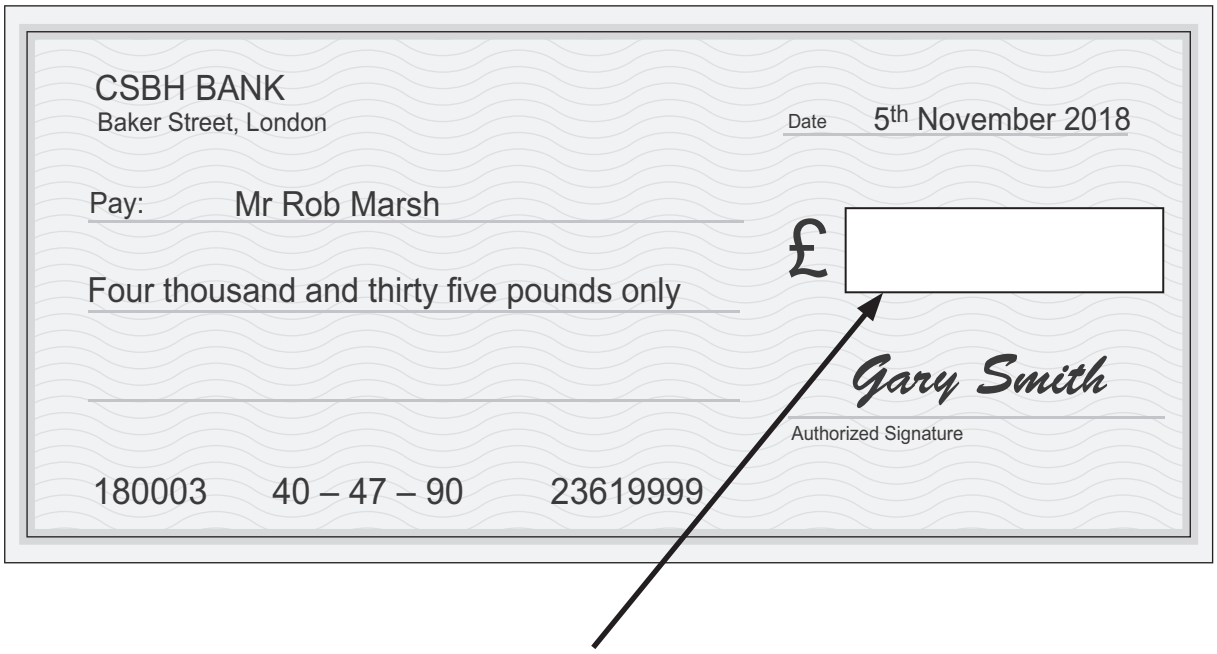
1. *(a)* Gary Smith buys a car from Rob Marsh.
Look at the cheque below.
It is from Gary Smith to Rob Marsh.



(i) Write the number four thousand and thirty five, in figures.
Write it in the box on the cheque. [1]

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(ii) Rob Marsh estimates this amount to be ten thousand pounds.
Is this a good estimate?

Yes ☐ No ☐

Give a reason for your answer. [1]

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(b) Rob Marsh's last statement of his bank account is shown below.

Bank of Wales

Account Details 008881122			Mr R Marsh	
Date	Description	Money out	Money in	Balance
15 Oct	Cash	£50.00		£75.00
17 Oct	The House Cafe	£6.45		£68.55
21 Oct	Petrol Garage	£35.00		£33.55
22 Oct	Janet Williams		£45.00	£78.55
28 Oct	LocalFood.com	£72.26		£6.29
29 Oct	GM Shoes	£27.29		–£21.00

(i) The balance of the account on 29th October is –£21.00.
Explain what this means. [1]

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(ii) Rob Marsh expects £50.00 to go into his account on 30th October.
What will be the new balance of his bank account? [2]

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2. The table below gives information about the 2016-2017 football Premier League.

#	Team	MP	W	D	L	GF	GA	GD	PTS
1	Chelsea	38	30	3	5	85	33	52	93
2	Tottenham	38	26	8	4	86	26	60	86
3	Man. City	38	23	9	6	80	39	41	78
4	Liverpool	38	22	10	6	78	42	36	76
5	Arsenal	38	23	6	9	77	44	33	75
6	Man. United	38	18	15	5	54	29	25	69
7	Everton	38	17	10	11	62	44	18	61
8	Southampton	38	12	10	16	41	48	–7	46
9	Bournemouth	38	12	10	16	55	67	–12	46
10	West Brom	38	12	9	17	43	51	–8	45
11	West Ham	38	12	9	17	47	64	–17	45
12	Leicester City	38	12	8	18	48	63	–15	44
13	Stoke City	38	11	11	16	41	56	–15	44
14	Crystal Palace	38	12	5	21	50	63	–13	41
15	Swansea City	38	12	5	21	45	70	–25	41
16	Burnley FC	38	11	7	20	39	55	–16	40
17	Watford	38	11	7	20	40	68	–28	40
18	Hull City	38	9	7	22	37	80	–43	34
19	Middlesbrough	38	5	13	20	27	53	–26	28
20	Sunderland	38	6	6	26	29	69	–40	24

Key:

MP	number of **Matches Played**
W	number of matches **Won**
D	number of matches **Drawn**
L	number of matches **Lost**
GF	**Goals For** (number of goals the team has scored)
GA	**Goals Against** (number of goals scored against the team)
GD	**Goal Difference** (number of goals the team has scored minus the number of goals scored against the team)
PTS	total number of **Points** gained

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Use the information on the opposite page to answer the following questions.

(a) Circle either TRUE or FALSE for each of the following statements. [2]

Watford has the most goals scored against them.	TRUE	FALSE
Chelsea scored the most goals.	TRUE	FALSE
Bournemouth has double the points of Middlesbrough.	TRUE	FALSE
The GD for Chelsea is 92 more than the GD for Sunderland.	TRUE	FALSE

(b) What was the modal number of matches won? [1]

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(c) What is the range of the total number of points gained? [2]

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(d) Which of the following is the rule to find the value of GD?
Circle your answer. [1]

GD = GF + GA GD = GF – GA GD = GA – GF

GD = GF × GA GD = GA ÷ GF

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

Lowri and Jack are getting married.
They have a budget of £5000 for their wedding reception.

There will be a total of 100 people going to the reception.

Lowri and Jack wish to
- have a disco,
- have a meal for each person going to the reception,
- have as much money left over as possible to buy flowers.

They will make their final choice from the three hotels given in the table below.

	Wave Bay Hotel	Jenkins Hotel	Castle View Hotel
Room hire	Free	£900	Everything for £4570
Disco	£275	Free	
Meal	£45 per person	£38 per person	

Which hotel should Lowri and Jack choose?
You must show all your working. [4 + 2 OCW]

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Lowri and Jack should choose ..... Hotel

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(b) After the wedding, Lowri and Jack are going on their honeymoon to Greece. The total cost of the honeymoon is £3400.

They pay a deposit of £1000.

The holiday company then reduces the money they have left to pay by 10%.

The rest of the money they owe will be paid in 20 equal monthly payments.

How much will they need to pay each month? [5]

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(c) (i) The flight for Lowri and Jack's honeymoon is due to leave at 5:45 p.m.

Lowri and Jack
- want to check in 2 hours before the flight leaves,
- will take 30 minutes to get from their house to the check-in desk at the airport.

What is the latest time that Lowri and Jack should leave their house to check in for their flight?
You must show all your working. [3]

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(ii) What is 5:45 p.m. in 24-hour clock time?
Circle your answer. [1]

15:45 05:45 13:45 07:45 17:45

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4. Ffion is making a box for a present.
The box is a cuboid.
Ffion draws a sketch of a net of the cuboid.

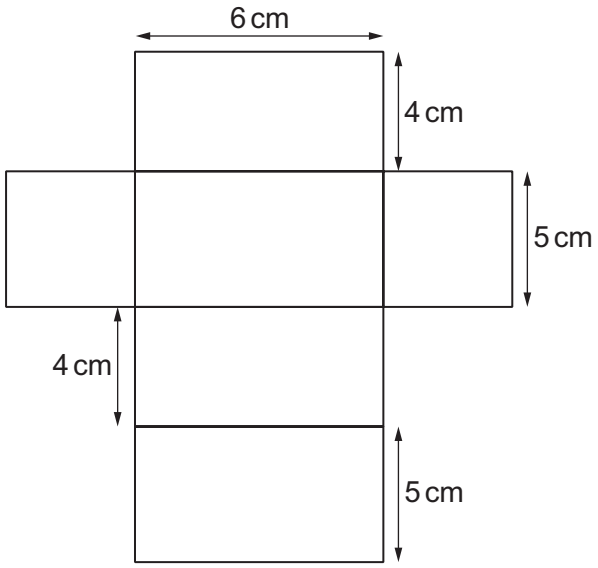

Diagram not drawn to scale

(a) Write down the height, length and width of the box. [1]

Height is ..... cm Length is ..... cm Width is ..... cm

(b) After Ffion has finished making the box, she cuts and sticks coloured string along each edge of the finished box.

The string costs 3p for every 2 cm.
How much will Ffion spend on the string?
You must show all your working. [4]

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Cost of the string is .....

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5.

In some schools, pupils complete a cycling test.
This involves cycling around cones and knowing how you should ride safely on the road.

The diagram shows part of the route that cyclists follow.

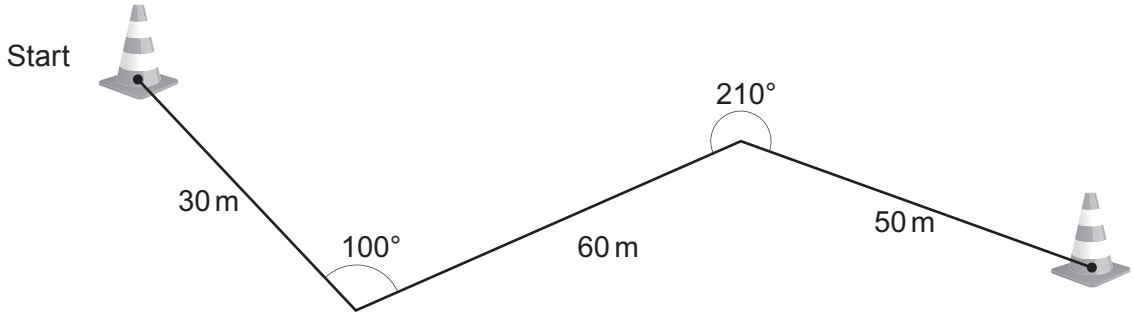

Diagram not drawn to scale

(a) What is the special name given to the angle marked as 210° in the diagram?
Circle your answer. [1]

acute right angle obtuse reflex straight line

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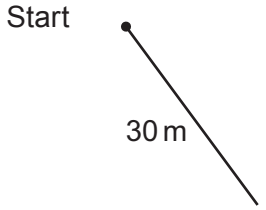
(b) Draw an accurate scale diagram of the route shown on the opposite page.
Use the space below.
Use the scale: 1 cm represents 10 m.
The first part of the diagram has been drawn for you. [3]



(c) Of a class of 27 pupils, $\frac{2}{9}$ **did not** complete their cycling test.

How many pupils **did** complete their cycling test? [3]

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6. *(a)* Rob has carried out a survey.
He asked 25 students how many times they visited the library last month.
His results are shown below.

Number of library visits	0	1	2	3	4	5
Tally		卌 I	卌 II	IIII	卌 III	

Using Rob's results, answer the following questions.

(i) What is the range?
Circle your answer. [1]

0 1 2 3 4 5

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(ii) What is the median?
Circle your answer. [1]

0 1 2 3 4 5

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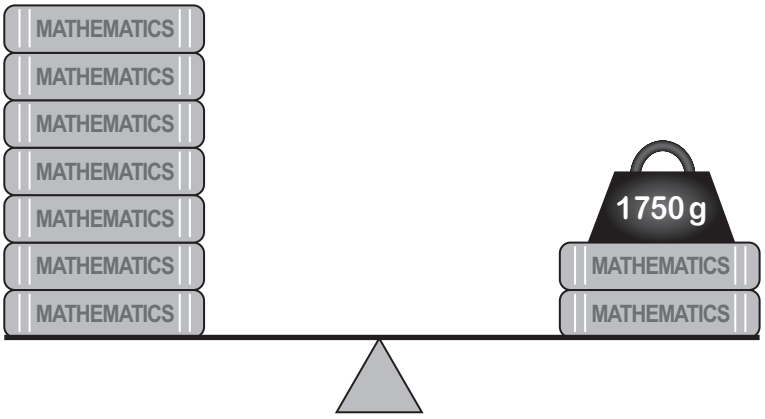
(b) Rob puts some books and a weight on a set of balance scales.
All the books are identical.



What is the mass of one book? [2]

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(c) Rob balances some identical dictionaries.
10 dictionaries are on one side.
2 dictionaries and a 3200 g weight are on the other side.

Let the mass of one dictionary be x grams.

(i) Use the information above to write an equation in terms of x. [1]

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(ii) Find the total mass of **all 12** dictionaries. [2]

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The total mass of all 12 dictionaries is ..... g

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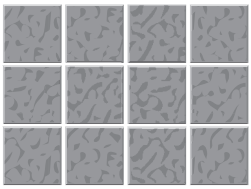
7. *(a)* *Tref-tiles* sells boxes of small wall tiles.
Three different boxes are available.



Box of 25 tiles for £7.50	Box of 40 tiles for £11.20	Box of 100 tiles for £29

Catrin is buying a very large quantity of these small tiles to cover all the walls in her bathroom.
Which box offers the best value for money?
You must show all your working. [4]

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(b) *Tref-tiles* has 5 boxes of tiles on special offer.
All the tiles in each box are identical.

Box	A	B	C	D	E
Shape of tile	Square	Rhombus	Regular pentagon	Right-angled triangle	Circle

3 of these boxes contain tiles that tessellate.
Manon is asked to select these 3 boxes.
Which **3 boxes** should Manon select? [2]

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Box ....., box ..... and box .....

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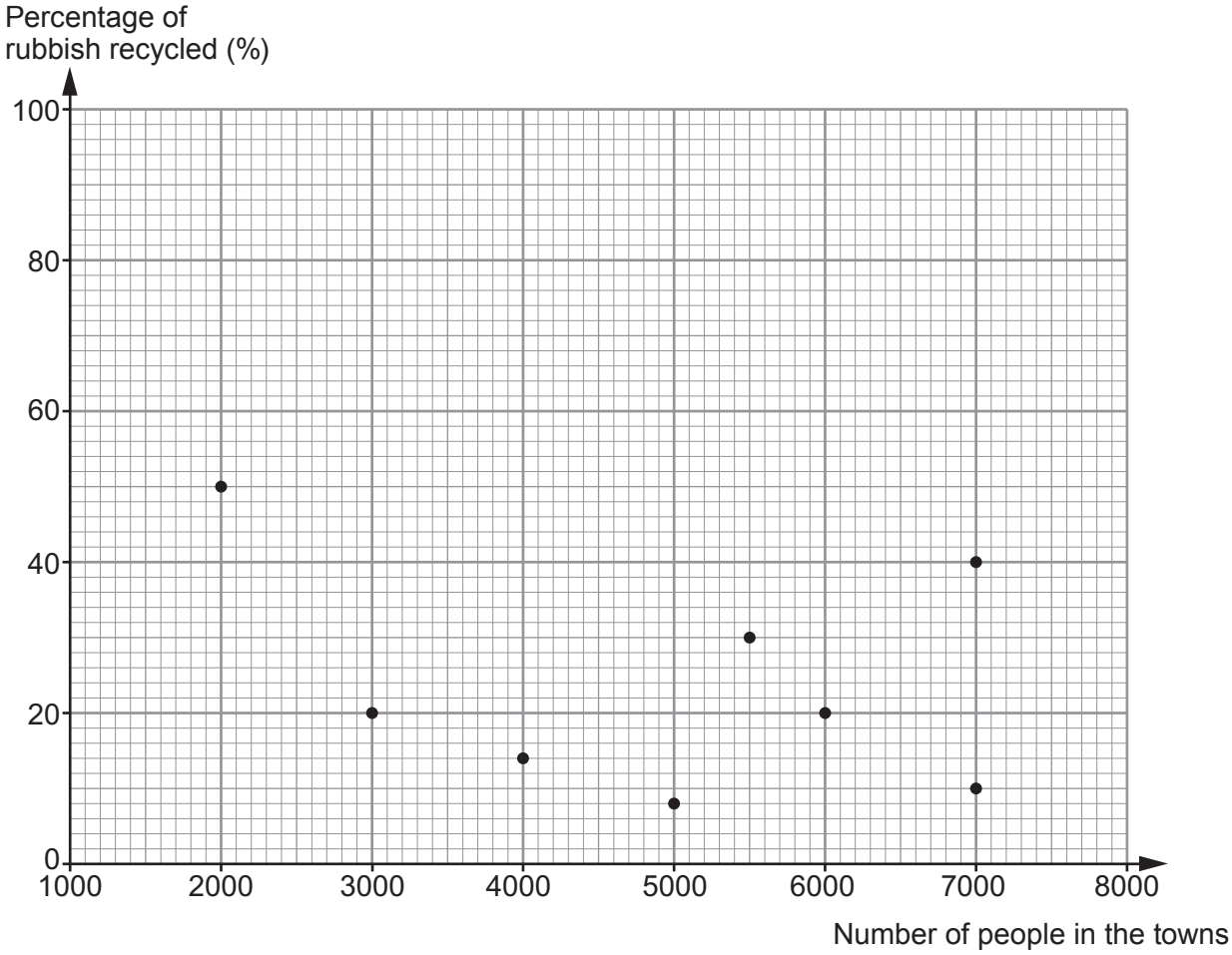
8. The mass of rubbish recycled is given as a percentage of the total mass of rubbish produced.

The percentage of rubbish recycled by people living in 8 small towns was recorded.
The results for the first week in July 2005 are shown in the scatter diagram below.



(a) Complete each of the statements below. [2]

'In July 2005, two of the 8 towns had the same number of people.
The percentages of rubbish recycled in these two towns were

..... % and ..... %.'

'The town with the least number of people had set a target of recycling 45% of rubbish for July 2005.
This small town beat this target by ..... %'

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(b) Explain why it is **not** reasonable to use this data to estimate the percentage of rubbish recycled in a town of 9000 people. [1]

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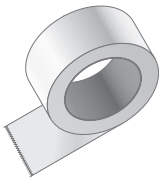
9. A badge is made using a metal button, a pin and sticky tape.

Lulu's Craft Shop

Pack of 42 metal buttons, only £2.50

Bag of 24 pins, only £1.10

60 cm roll of sticky tape, 52p



(a) Elwyn decides to buy metal buttons and pins to make badges, so that there are no metal buttons or pins left over.
He wants to buy the **least** possible number of packs of metal buttons and bags of pins.

(i) Show that Elwyn should buy 4 packs of metal buttons and 7 bags of pins.
You must show all your working. [2]

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(ii) What is the maximum number of badges Elwyn can possibly make using 4 packs of metal buttons and 7 bags of pins? [1]

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(b) Each pin is stuck on to a metal button using approximately 2·5 cm of sticky tape.
Elwyn plans to sell the badges to make the maximum profit possible.

(i) How many rolls of sticky tape should Elwyn buy? [3]

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Number of rolls of sticky tape .....

(ii) Elwyn sells all the badges he makes for 50p each.
Calculate the maximum profit he would make. [5]

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

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