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NATIONAL QUALIFICATIONS 2013

MATHEMATICS STANDARD GRADE

Foundation Level

Paper 1

Non-calculator

FRIDAY, 3 MAY 9.00 AM – 9.20 AM

	KU	RE
Paper 1		
Paper 2		
Total		



* 2 5 0 0 2 7 0 1 *

2500/27/01

Fill in these boxes and read what is printed below.

Full name of centre

Town

Forename(s)

Surname

Number of seat

Date of birth

Day

Month

Year

Scottish candidate number

1 You may **NOT** use a calculator.

2 Answer as many questions as you can.

3 Write your working and answers in the spaces provided. Additional space is provided at the end of this question-answer book for use if required. If you use this space, write clearly the number of the question involved.

4 Full credit will be given only where the solution contains appropriate working.

5 Before leaving the examination room you must give this book to the Invigilator. If you do not, you may lose all the marks for this paper.

Use **blue** or **black ink**. Pencil may be used for graphs and diagrams only.



* 2 5 0 0 2 7 0 1 0 1 *

1. Work out the answers to the following.

(a) $6427 + 125$

WORKING	
ANSWER	

(b) 47.2×3

WORKING	
ANSWER	

(c) 20% of £500

WORKING	
ANSWER	£

Marks

	KU	RE
1		
1		
2		



2. In a golf club, $\frac{1}{4}$ of the members vote to increase the membership fees.

The golf club has 720 members.

How many members vote to increase the membership fees?



WORKING	
ANSWER	members

Marks

	KU	RE
2		



Marks

KU	RE
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3. A health spa offers the following treatments during a day visit.



Session 1 can be **Yoga** or **Aromatherapy**

Session 2 can be **Sauna** or **Facial**

Session 3 can be **Manicure** or **Pedicure**

The table below shows one possible combination.

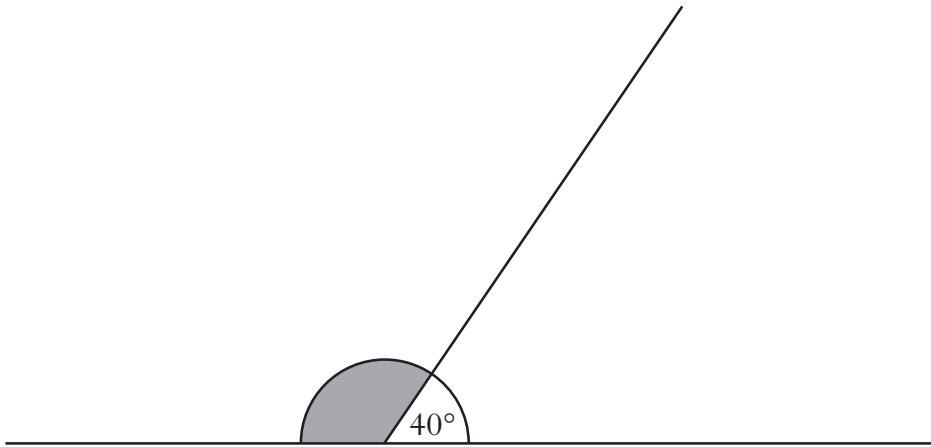
<i>Session 1</i>	<i>Session 2</i>	<i>Session 3</i>
Yoga	Facial	Pedicure

Complete the table to show five other possible combinations.

3



4. Calculate the size of the shaded angle.



WORKING

ANSWER

°

Marks

KU	RE
----	----

2



5. George is going to knit a sweater.

He needs to buy 10 balls of wool and 2 pairs of knitting needles.



One ball of wool costs £3.

One pair of knitting needles costs £2.50.

How much will it cost George to knit the sweater?

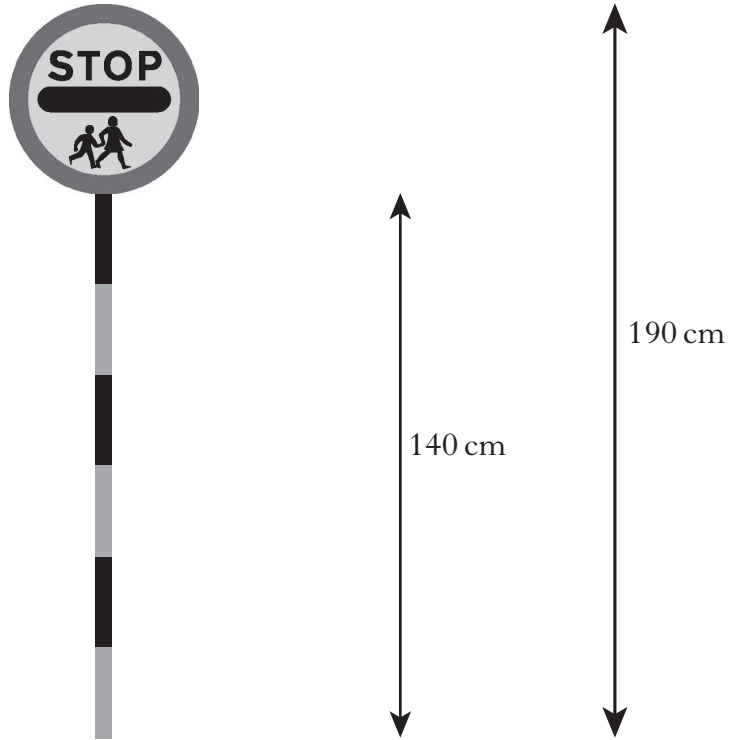
WORKING	
ANSWER	£

Marks

KU	RE
3	



6. A crossing patrol sign is made using a pole with a circle on top.



The crossing patrol sign is 190 centimetres long.
 The pole is 140 centimetres long.
 Calculate the radius of the circle.

WORKING	
ANSWER	

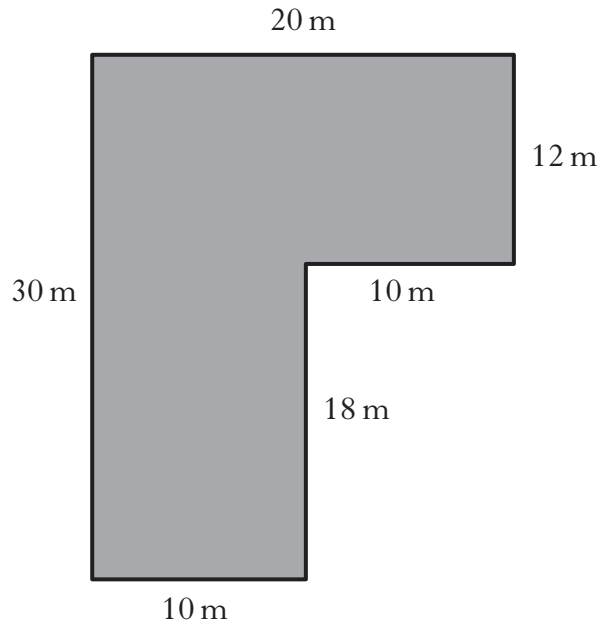
centimetres

Marks

	KU	RE
3		



7. The drawing shows Mary's lawn.



(a) Mary has to clip the grass round the edge of the lawn.
What length of edge does Mary have to clip?

WORKING	
ANSWER	metres

(b) Mary takes 10 minutes to clip the 20 metre edge of her lawn.
If she continues to work at the same rate, how long will it take her to clip all the edges?

WORKING	
ANSWER	minutes

Marks

	KU	RE
2		
3		



8. Study the calculations shown below.

$$1 \times 1 = 1$$

$$11 \times 11 = 121$$

$$111 \times 111 = 12321$$

$$1111 \times 1111 = 1234321$$

What is the value of 11111×11111 ?

ANSWER	
--------	--

Marks

KU	RE
1	



Marks

	KU	RE
1		
2		

9. A multi-storey car park has 3 levels underground and 5 levels above ground.

Ground level is marked Level 0.

The levels are connected by a lift.

Level 5	⊙
Level 4	⊙
Level 3	⊙
Level 2	⊙
Level 1	⊙
Level 0	⊙
Level -1	⊙
Level -2	⊙
Level -3	⊙

When the lift starts at Level 2 and goes down 3 levels, it arrives at Level -1.

- (a) The lift starts at Level 1 and goes down 4 levels.

Where will it arrive?

WORKING	
ANSWER	Level

1

- (b) The lift starts at Level -2, goes up 6 levels, then down 5 levels.

Where will it arrive?

WORKING	
ANSWER	Level

2

[END OF QUESTION PAPER]



* 2 5 0 0 2 7 0 1 1 0 *

ADDITIONAL SPACE FOR ANSWERS

<i>Marks</i>	KU	RE



ADDITIONAL SPACE FOR ANSWERS

<i>Marks</i>	KU	RE



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F

NATIONAL QUALIFICATIONS 2013

KU RE

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MATHEMATICS
STANDARD GRADE
 Foundation Level
 Paper 2

2500/27/02

FRIDAY, 3 MAY 9.40 AM – 10.20 AM

Fill in these boxes and read what is printed below.

Full name of centre

Town

Forename(s)

Surname

Number of seat

Date of birth

Day

Month

Year

Scottish candidate number

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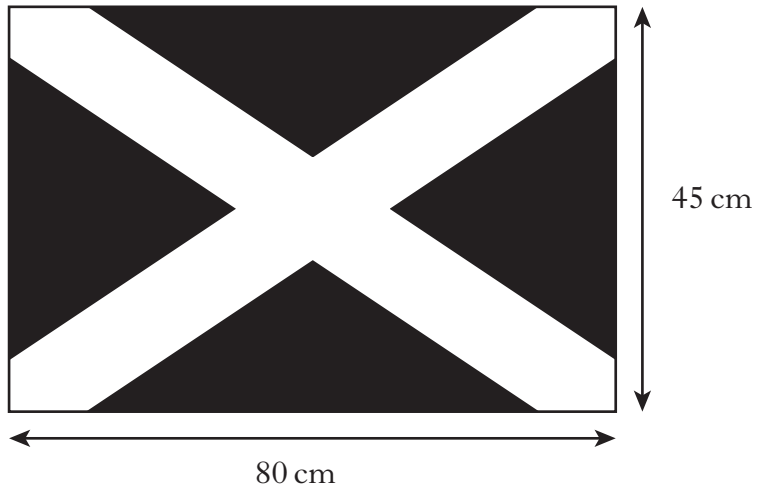
- You may use a calculator.**
- Answer as many questions as you can.
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Use **blue** or **black ink**. Pencil may be used for graphs and diagrams only.



* 2 5 0 0 2 7 0 1 1 3 *

1. A rectangular flag is shown below.



Calculate the area of the flag.

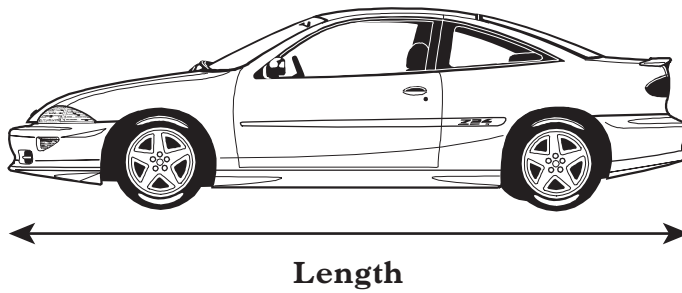
WORKING	
ANSWER	square centimetres

Marks

KU	RE
2	



2. The scale drawing of a car is shown below.



(a) Measure the length of the car in centimetres.

ANSWER		centimetres
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The scale of the drawing is
1 centimetre represents 50 centimetres.

(b) Find the **actual** length of the car in centimetres.

WORKING		
ANSWER		centimetres

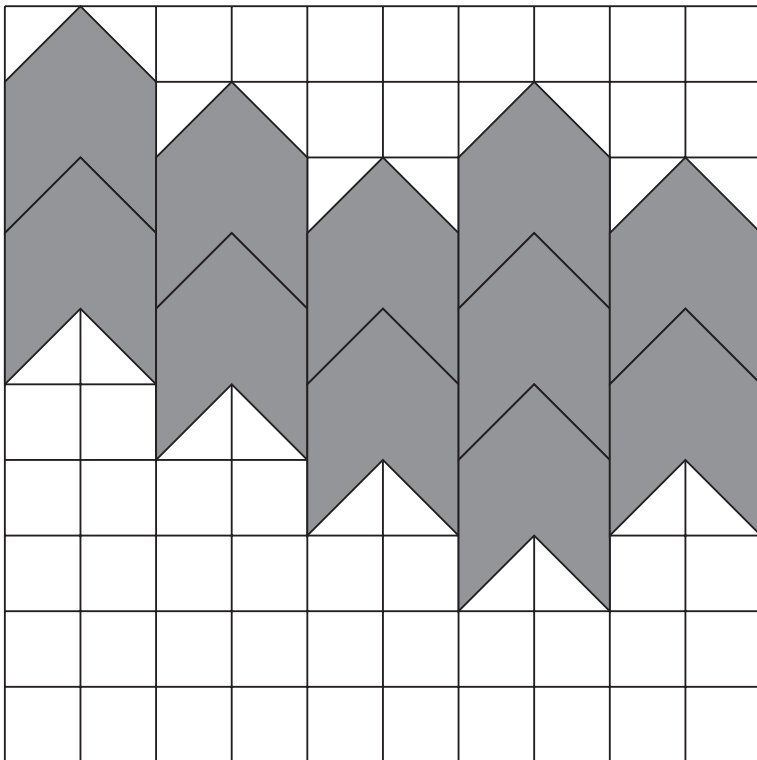
Marks

	KU	RE
1		
2		





3. The pattern below is made with tiles shaped as follows.



Draw three more tiles to continue the pattern.

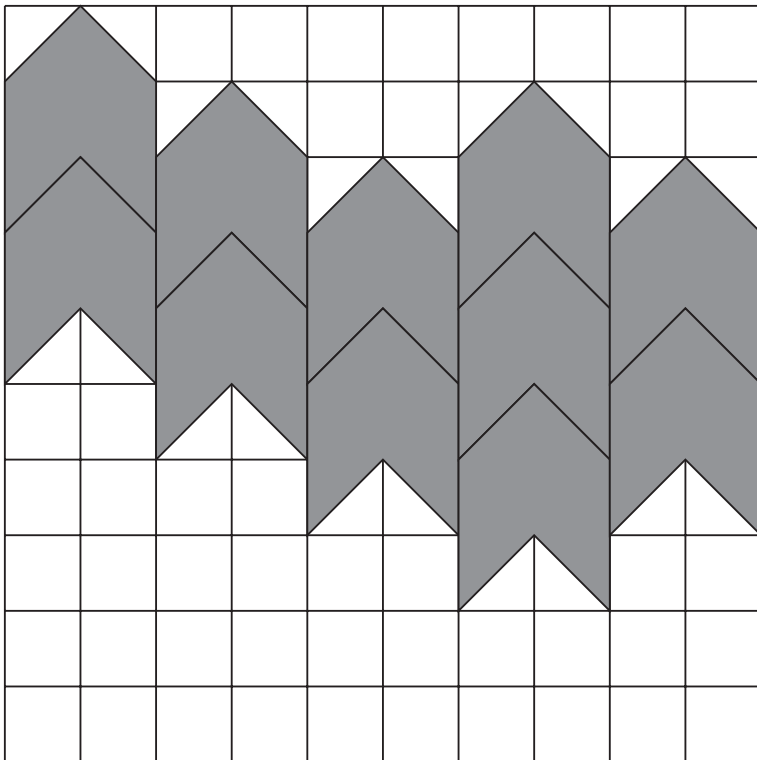
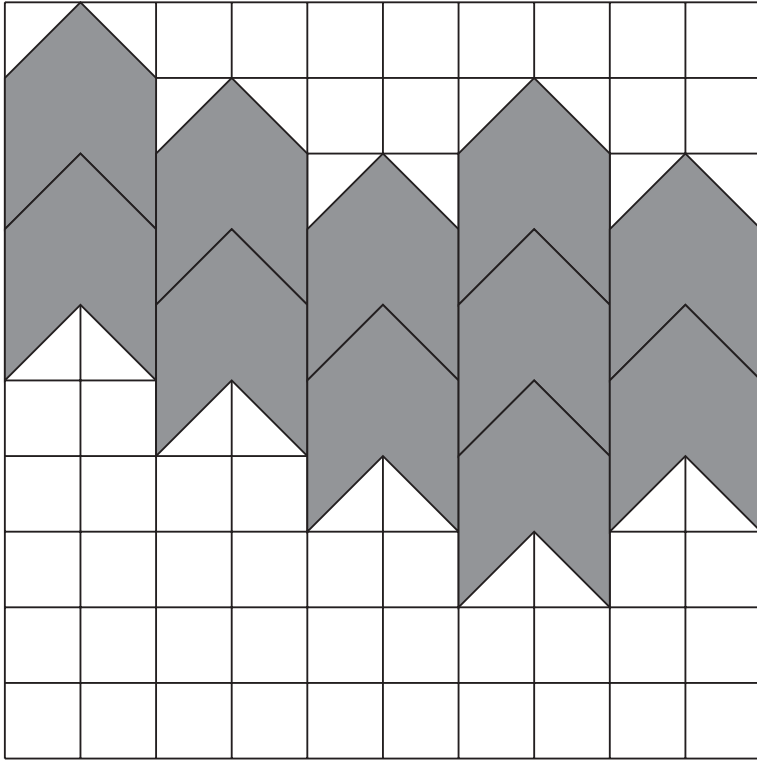
YOU MAY USE THE EXTRA DIAGRAMS ON THE OPPOSITE PAGE FOR WORKING IF YOU WISH.

Marks

KU	RE
3	



3. (continued)



Marks

KU	RE
----	----

4. Mrs Walsh is making some home improvements.
She needs the joiner, plumber and electrician to **work together** for 3 days in October.

These are the dates that they are available in October.

Joiner 8th → 20th

Plumber 15th → 22nd

Electrician Any day except Fridays, Saturdays and Sundays

Use the calendar for October, shown below, to find the 3 dates that Mrs Walsh can book the joiner, plumber and electrician to work together.

OCTOBER

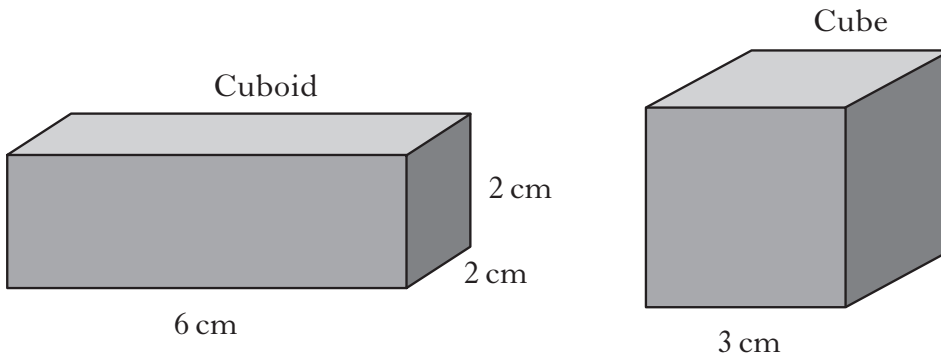
Mon	Tue	Wed	Thu	Fri	Sat	Sun
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

WORKING	
ANSWER	

3



5. A cuboid and a cube are shown below.



(a) Calculate the volume of the **cuboid**.

WORKING	
ANSWER	cubic centimetres

(b) Which shape has the larger volume?
You must give a reason for your answer.

WORKING	
ANSWER (WITH REASON)	

Marks	KU	RE
2		
3		



Marks

KU	RE
----	----

6. David is taking his 3 grandchildren to the cinema.
He buys the tickets online.



CINEMA: Cost of tickets	
Adult	£8·20
Child	£5·30
Senior	£5·40
Student	£5·60
Online Booking Fee	£0·50 per ticket

David's ticket is at the senior rate.

His grandchildren's tickets are all at the child rate.

What was the total cost?

WORKING

[Large empty area for working out the solution]

ANSWER

£

3



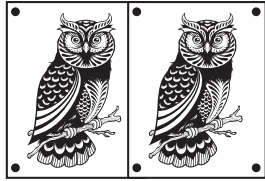
Marks

7. Posters are put on a wall using drawing pins at their corners as shown below.



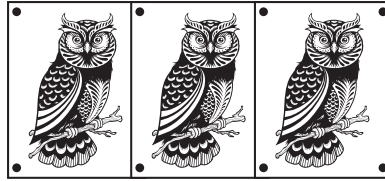
1 poster

4 drawing pins



2 posters

6 drawing pins



3 posters

- (a) Complete the table.

Number of posters	1	2	3	4	5	6		11
Number of drawing pins	4	6						

WORKING

- (b) Write a rule for finding the number of drawing pins if you know the number of posters.

RULE

	KU	RE
4		
2		



Marks

	KU	RE
2		
3		

8. Eve is paid £7.50 per hour.

(a) How much is Eve paid for working 4 hours?

WORKING		
ANSWER	£	

2

(b) When Eve works overtime, she is paid **double time**.

Eve is paid £90 for working overtime.

How many hours of overtime did she work?

WORKING		
ANSWER		hours

3

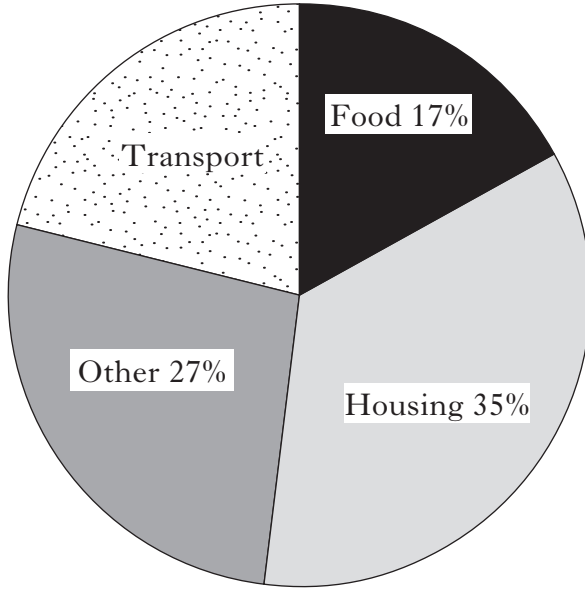


Marks

KU	RE
----	----

9. The pie chart shows how the Khan family spend their annual income.

Khan Family – Annual Income



- (a) What percentage of the Khan family's annual income is spent on transport?

WORKING	
ANSWER	%

3

- (b) The Khan family's annual income is £32 000.
How much money does the Khan family spend on food?

WORKING	
ANSWER	£

3



10. A number is called a palindrome if it reads the same backwards as forwards.

Some examples are shown below.

161 212 353 383

Write down the **first** number, **bigger** than 475, that is a palindrome.

WORKING	
ANSWER	

Marks

KU	RE
2	



11. The opening times of a Recycling Centre are shown below.

<i>Recycling Centre Opening Times</i>	
<i>Summer (April to September)</i>	
Mon – Fri	07 00 – 20 00
Sat – Sun	08 30 – 17 00
<i>Winter (October to March)</i>	
Mon – Fri	07 00 – 17 00
Sat – Sun	08 30 – 16 00

For how long is the Recycling Centre open on Saturday 9th February?

WORKING		
ANSWER	hours	minutes

Marks

KU	RE
----	----

3



Marks

KU	RE
----	----

12. The number of children with broken bones attending a hospital is shown in the table below.

<i>Month</i>	<i>Number of children</i>
January	8
February	7
March	7
April	7
May	4
June	7
July	9
August	4
September	5
October	2
November	5
December	7



Calculate the mean number of children with broken bones attending the hospital per month.

WORKING	
ANSWER	children

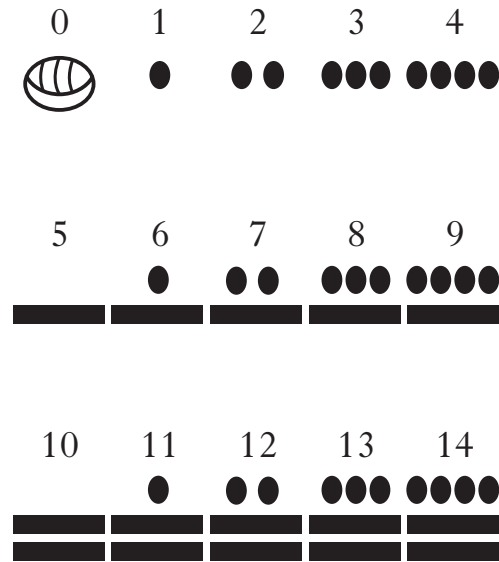
4



Marks

KU	RE
----	----

13. The ancient Mayan civilization in Mexico used a counting system based on dots and bars.
- The chart below shows some numbers in the Mayan counting system.



In our counting system, $3 + 5 = 8$

In the Mayan counting system, + =

- (a) Write the calculation $4 + 6 + 7$ in the Mayan counting system.

ANSWER	

1

- (b) Write the answer to $4 + 6 + 7$ in the Mayan counting system.

WORKING	
ANSWER	

3



Marks

KU	RE

14. A tractor tyre is 35 centimetres high when positioned as shown below.



- (a) Write 35 centimetres in metres.

WORKING	
ANSWER	metres

2

- (b) A farmer stacks tractor tyres in piles.

For safety reasons, the maximum height of a pile of tyres is 2 metres.



What is the maximum number of these tyres which can be safely stacked in a single pile?

WORKING	
ANSWER	tyres

3

[END OF QUESTION PAPER]



ADDITIONAL SPACE FOR ANSWERS

Marks

KU	RE

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ADDITIONAL SPACE FOR ANSWERS

<i>Marks</i>	KU	RE



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