

FOR OFFICIAL USE



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NATIONAL QUALIFICATIONS 2013

MATHEMATICS STANDARD GRADE

General Level

Paper 1

Non-calculator

FRIDAY, 3 MAY 10.40 AM – 11.15 AM

	KU	RE
Paper 1		
Paper 2		
Total		



* 2 5 0 0 2 9 0 1 *

2500/29/01

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.

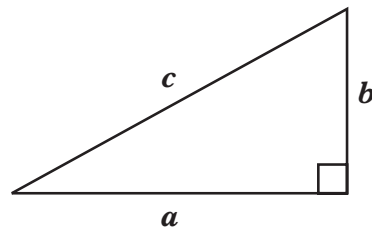


* 2 5 0 0 2 9 0 1 0 1 *

FORMULAE LIST

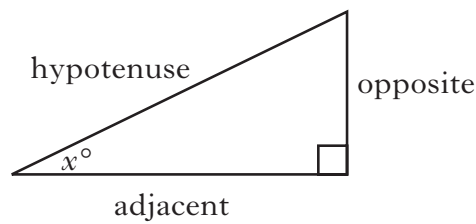
Circumference of a circle:	$C = \pi d$
Area of a circle:	$A = \pi r^2$
Curved surface area of a cylinder:	$A = 2\pi r h$
Volume of a cylinder:	$V = \pi r^2 h$
Volume of a triangular prism:	$V = Ah$

Theorem of Pythagoras:



$$a^2 + b^2 = c^2$$

Trigonometric ratios
in a right angled
triangle:

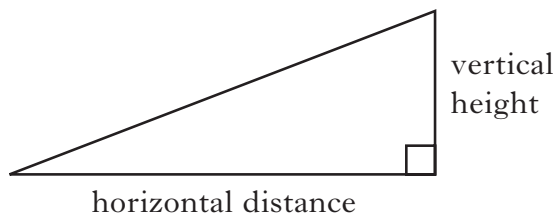


$$\tan x^\circ = \frac{\text{opposite}}{\text{adjacent}}$$

$$\sin x^\circ = \frac{\text{opposite}}{\text{hypotenuse}}$$

$$\cos x^\circ = \frac{\text{adjacent}}{\text{hypotenuse}}$$

Gradient:



$$\text{Gradient} = \frac{\text{vertical height}}{\text{horizontal distance}}$$



1. Carry out the following calculations.

(a) $306.5 - 214.78$

(b) 9.53×300

(c) $2.58 \div 4$

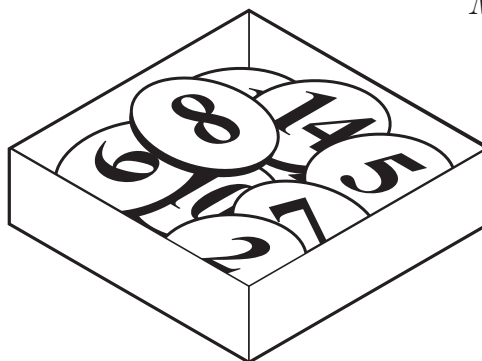
(d) 70% of 26

Marks	KU	RE
1		
1		
1		
2		



2. A box contains counters numbered from 1 to 14.

A counter is chosen at random.



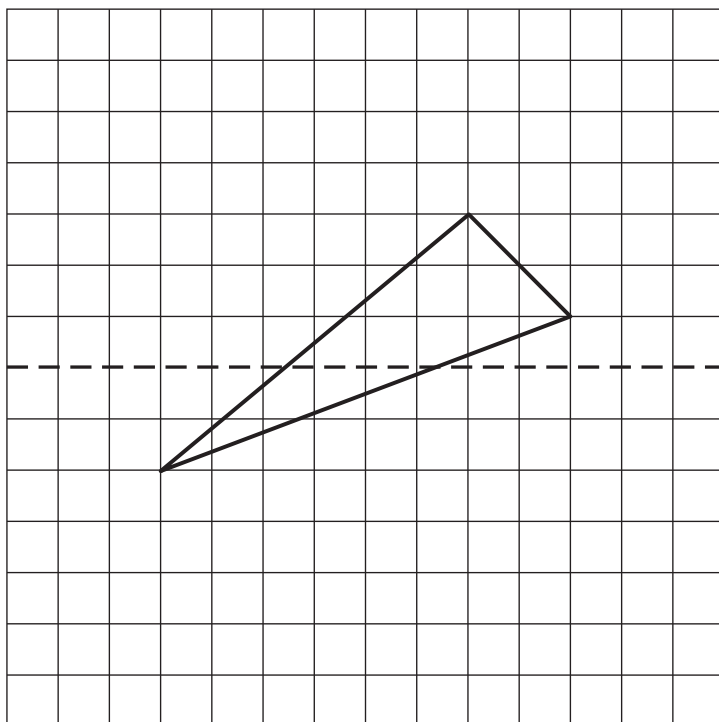
What is the probability that this counter has a number greater than 9?

Marks

	KU	RE
2		



3. Complete the diagram so that the dotted line is an axis of symmetry.



Marks

KU	RE
2	



4. A bed shop is having a sale.

Marks

**ALL BEDS
ONE THIRD OFF NORMAL PRICE**



The normal price of a bed is £768.

Find the sale price of this bed.

KU	RE
3	
3	

5. A new tram system is operating in Inverness.



The trams run between the four stations shown.

All trams have the same journey times.

Part of the timetable is shown below.

Station	Tram 1	Tram 2
Crown	0956	1002
Union	1011	
Telford	1018	
Ferry		1044

Complete this timetable.

3



6. (a) At 6.00 am the temperature in Edinburgh was -13°C .
At 10.00 am the temperature was -5°C .



Marks

	KU	RE
1		
1		

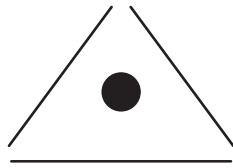
By how many degrees had the temperature risen?

- (b) At 3.00 pm the temperature had risen a further 7 degrees.
What was the temperature at 3.00 pm?

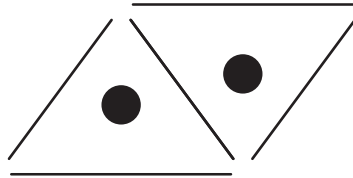


7. A wallpaper pattern consists of lines and dots.

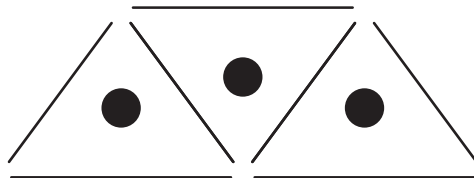
Marks



Shape 1



Shape 2



Shape 3

(a) Complete the table below.

Number of dots (D)	1	2	3	4	5		14
Number of lines (L)	3	5					

2

(b) Write down a formula for calculating the number of lines (L) when you know the number of dots (D).

2

(c) A pattern has been made using 77 lines.
How many dots are in the pattern?

2

KU	RE



* 2 5 0 0 2 9 0 1 0 8 *

8. (a) A pack of 500 sheets of paper is 5.25 cm thick.



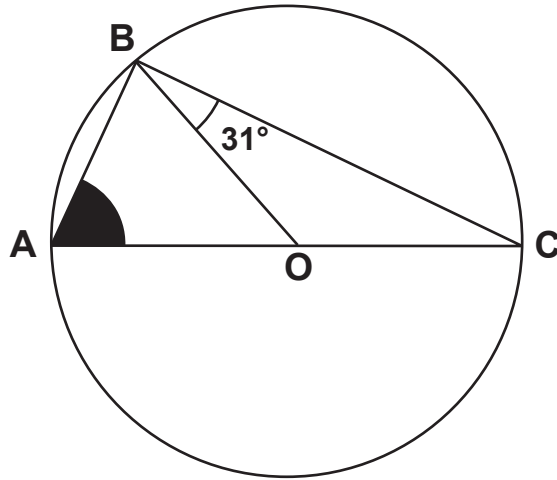
Calculate the thickness of 1 sheet of paper.

(b) Write this answer in scientific notation.

<i>Marks</i>		KU	RE
1			
2			



9.



The diagram above shows:

- AC is a diameter of a circle with centre O
- B lies on the circumference
- angle OBC = 31° .

Calculate the size of the shaded angle BAO.

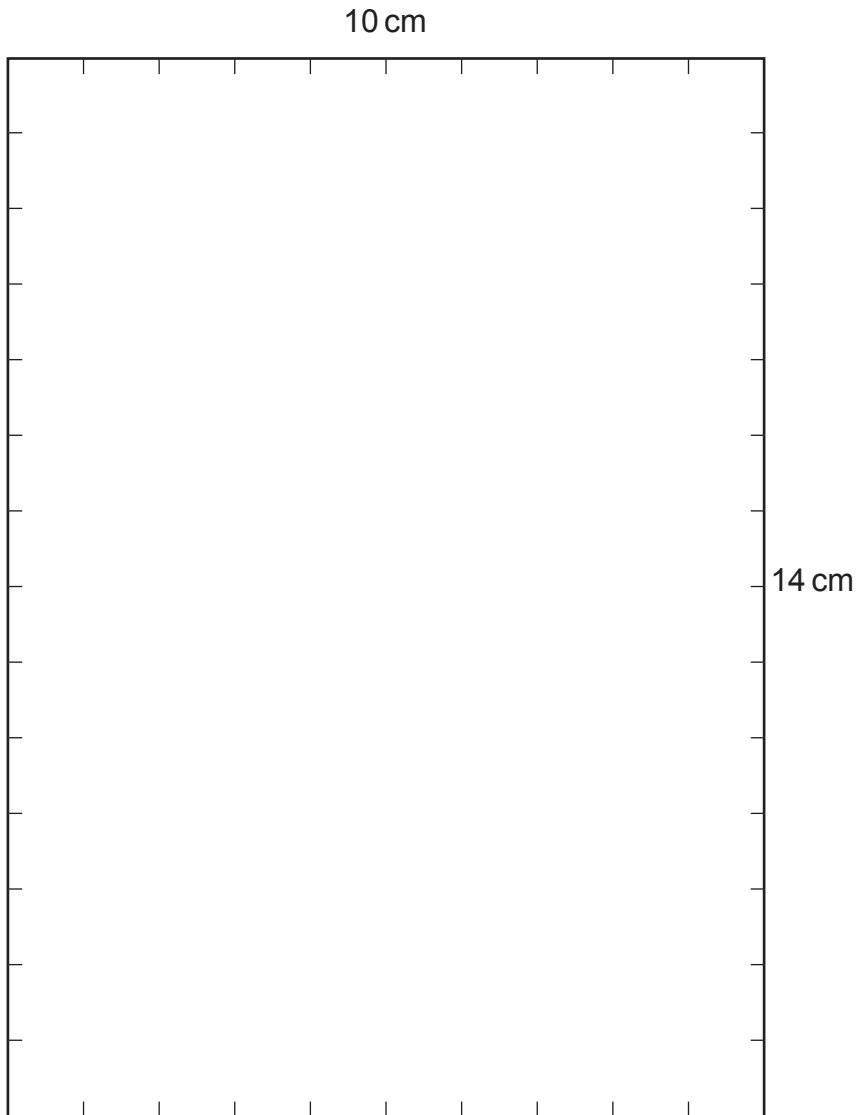
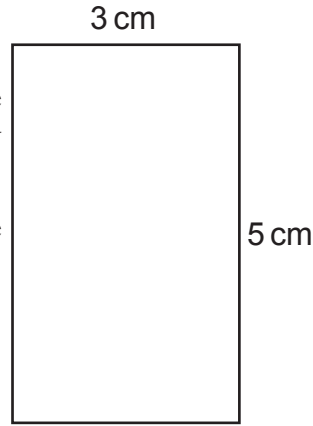
Marks	KU	RE
3		



10. This rectangle measures 5 cm by 3 cm.

Rectangles measuring 5 cm by 3 cm are to be fitted, **without overlapping**, on the 14 cm by 10 cm box below.

Draw these rectangles on the box to show the **maximum** number which can be fitted.



Marks

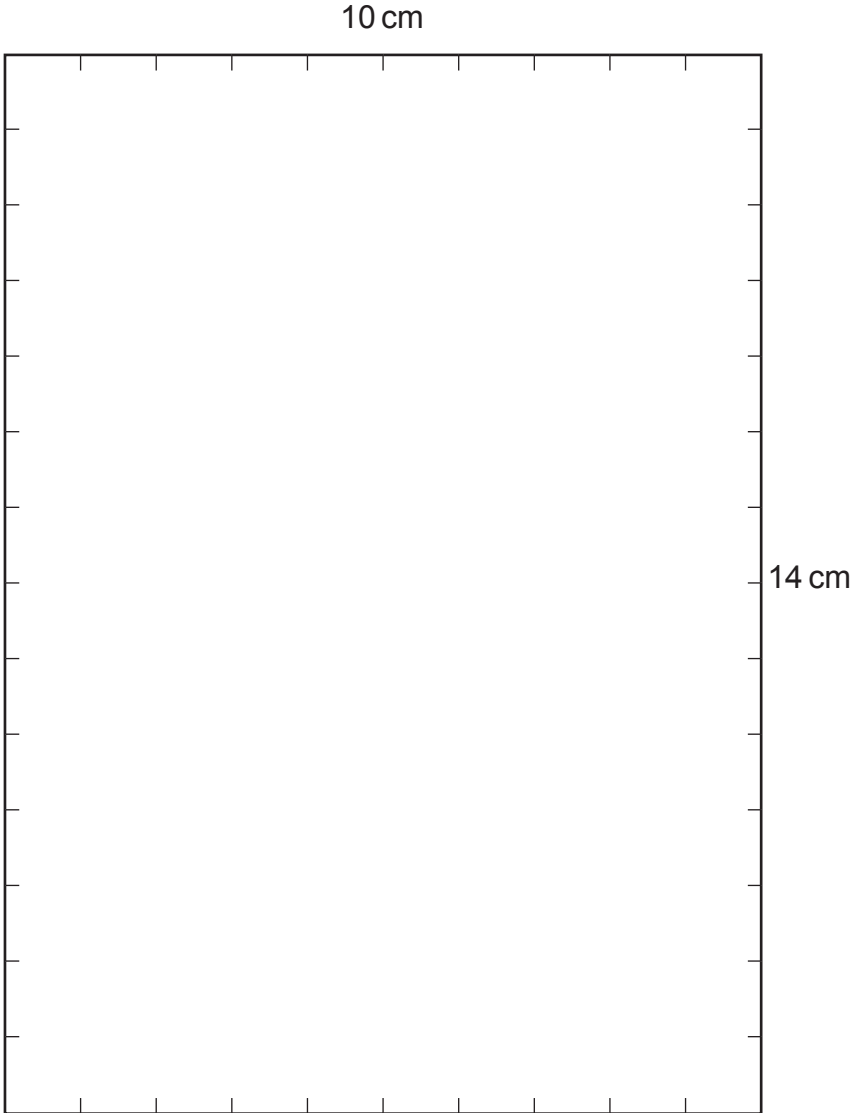
KU	RE
3	

Spare boxes can be found on *Pages twelve and thirteen.*

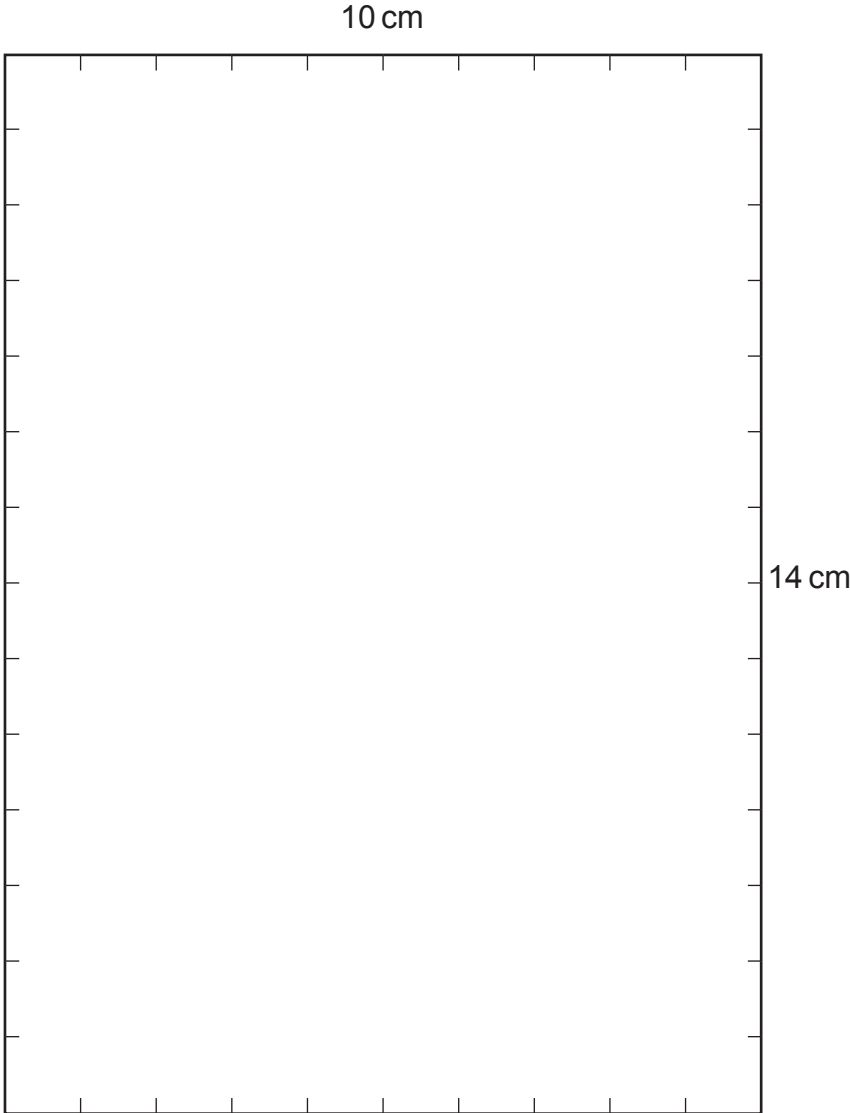
[END OF QUESTION PAPER]



Spare box for Question 10



Spare box for Question 10



ADDITIONAL SPACE FOR ANSWERS

Marks

KU	RE



ADDITIONAL SPACE FOR ANSWERS

<i>Marks</i>	KU	RE



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