

FOR OFFICIAL USE

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G

	KU	RE
Total marks		

**2500/403**

NATIONAL  
QUALIFICATIONS  
2004

FRIDAY, 7 MAY  
10.40 AM - 11.15 AM

**MATHEMATICS**  
**STANDARD GRADE**  
General Level  
Paper 1  
Non-calculator

Fill in these boxes and read what is printed below.

Full name of centre

Town

Forename(s)

Surname

Date of birth

Day Month Year

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Scottish candidate number

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Number of seat

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.

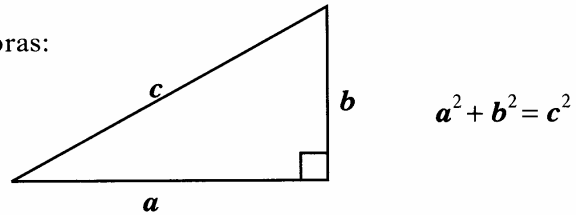
5 Before leaving the examination room you must give this book to the invigilator. If you do not you may lose all the marks for this paper.



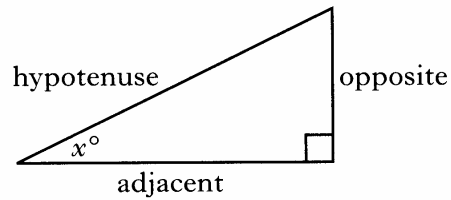
## FORMULAE LIST

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

Theorem of Pythagoras:

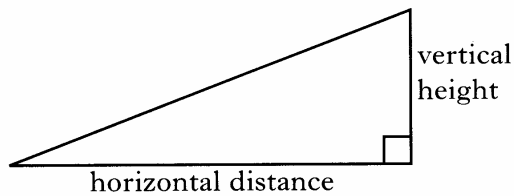


Trigonometric ratios  
in a right angled  
triangle:



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

Gradient:



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

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

1. Carry out the following calculations.

(a)  $14.93 - 3.7 + 2.15$

(b)  $42.8 \times 7$

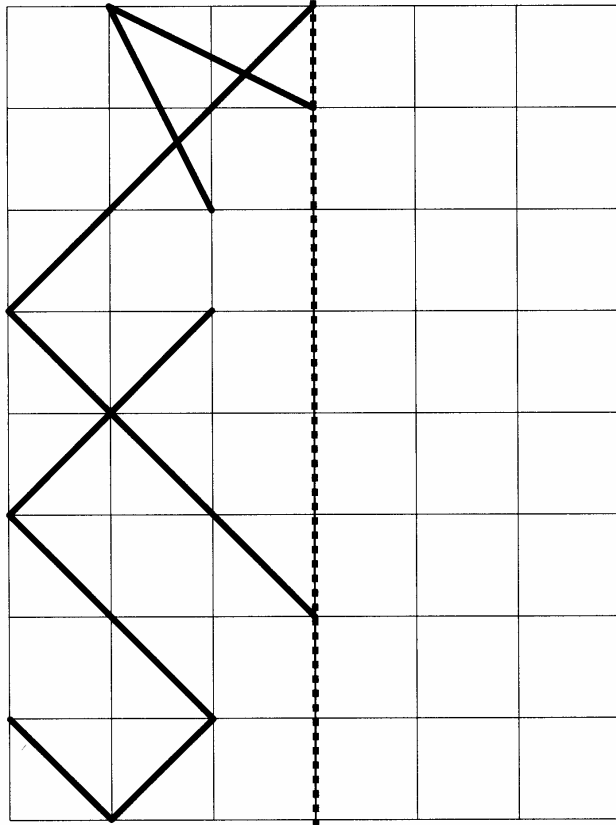
(c)  $1710 \div 3000$

(d) 90% of £180

2. Express  $\frac{3}{7}$  as a decimal.

Give your answer correct to two decimal places.

3. Ann Fiona Johnstone has drawn a design which uses her initials. She wants her finished design to be symmetrical. Complete her design so that the dotted line is an axis of symmetry.



Marks

	KU	RE
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1		

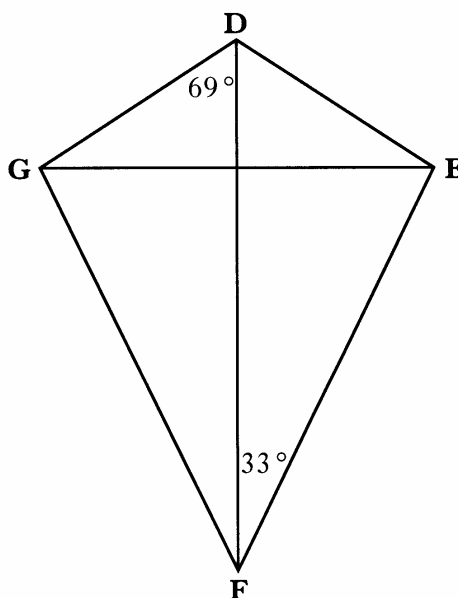
4. The largest ocean in the world is the Pacific Ocean. Its area is approximately  $1.813 \times 10^8$  square kilometres. Write this number in full.



6. Last month a garage sold 12 red cars, 9 silver cars and 15 black cars.  
Joe bought one of these cars.  
What is the probability that the car Joe bought was silver?  
Give your answer as a fraction in its simplest form.

Marks	DO NOT WRITE IN THIS MARGIN	
	KU	RE
2		
3		

7. DEFG is a kite.  
  - Angle GDF =  $69^\circ$
  - Angle EFD =  $33^\circ$
 Calculate the size of angle DGF.









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KU RE

Total marks

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**2500/404**

NATIONAL  
QUALIFICATIONS  
2004

FRIDAY, 7 MAY  
11.35 AM - 12.30 PM

MATHEMATICS  
STANDARD GRADE  
General Level  
Paper 2

**Fill in these boxes and read what is printed below.**

Full name of centre

Town

Forename(s)

Surname

Date of birth

Day Month Year

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Scottish candidate number

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Number of seat

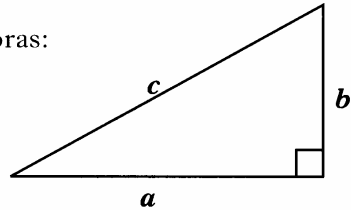
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- Answer as many questions as you can.
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## FORMULAE LIST

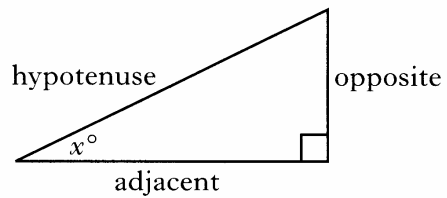
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Volume of a cylinder:	$V = \pi r^2 h$
Volume of a triangular prism:	$V = Ah$

Theorem of Pythagoras:



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

Trigonometric ratios  
in a right angled  
triangle:

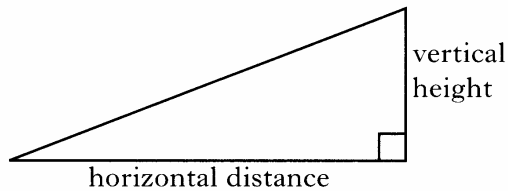


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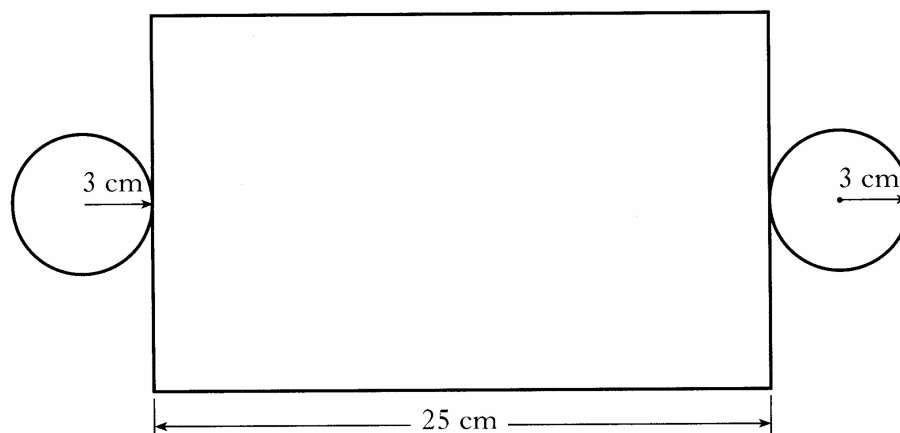




Marks

KU	RE

3. The sketch below shows the net of a three-dimensional shape.  
The net consists of a rectangle and two equal circles of radius 3 centimetres.



Find the **volume** of the three-dimensional shape formed from this net.

3

[Turn over

4. (a) Solve algebraically

$$5x - 2 = 2x + 19.$$

(b) Factorise fully

$$12 + 8p.$$

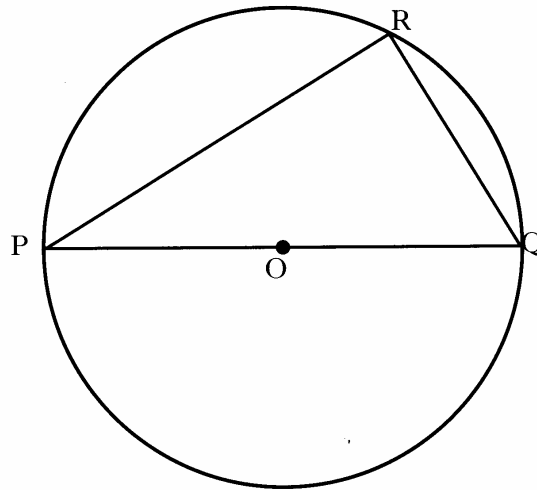
Marks

	KU	RE
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Marks

KU	RE
4	

5.



PQ is a diameter of the circle with centre O.  
 R is a point on the circumference of the circle.  
 PR is 12 centimetres.  
 RQ is 5.5 centimetres.  
 Calculate the length of the radius of the circle.

4

[Turn over





Marks

KU RE

7. (a) John is going to Italy on holiday.  
He changes £500 to Euros.  
The exchange rate is £1 = 1.51 Euros.  
How many Euros will he get?

2

- (b) While in Italy he decides to visit Switzerland for a day.  
He wants to change 100 Euros to Swiss Francs.  
John knows the exchange rate is £1 = 2.33 Swiss Francs.  
How many Swiss Francs should he get for 100 Euros?

3







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

**10. (continued)**

(b) The Parkway Hotel charges an extra £4.95 per person per night for a single room.

How much extra will Janice pay for her 14 night holiday if she wants a single room?

(c) If Janice books today she will get a 20% discount on her **total cost**.

Find the discounted price of her 14 night holiday in a single room from 5th July.

Marks

KU	RE

11. Mara travels 1850 miles every month.

Currently her car runs on unleaded petrol, which costs 76.9p per litre and her car travels 8.5 miles per litre.

(a) What is her monthly petrol bill?

2

Mara is thinking of having her car converted to run on Liquid Petroleum Gas (LPG).

LPG costs 38.9p per litre and using this fuel her car will travel 7.8 miles per litre.

(b) What will be her monthly saving if she converts her car to run on LPG?

2

Marks

KU	RE
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**11. (continued)**

(c) The cost of converting Mara's car to run on LPG is £800.

How many months of savings will it take to recover the cost of the conversion?

2

[Turn over

Marks

12. The current,  $C$  amps, of an electrical appliance is calculated using the formula

$$C = \frac{P}{240}, \quad \text{where } P \text{ watts is the power rating.}$$

- A hairdryer has a power rating of 850 watts.
- The fuse used should be the one just bigger than the calculated current.
- The choice of fuses is 3 amp, 5 amp and 13 amp.

Which fuse should be used?

	KU	RE
3		



