

## UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS International General Certificate of Secondary Education

Ortage Con



CANDIDATE NAME

CENTRE NUMBER

CANDIDATE NUMBER

ı	

**MATHEMATICS** 

Paper 1 (Core)

October/November 2010

1 hour

0580/11

Candidates answer on the Question Paper.

Additional Materials:

Electronic calculator

Mathematical tables (optional)

Geometrical instruments Tracing paper (optional)

## **READ THESE INSTRUCTIONS FIRST**

Write your Centre number, candidate number and name on all the work you hand in.

Write in dark blue or black pen.

You may use a pencil for any diagrams or graphs.

Do not use staples, paper clips, highlighters, glue or correction fluid.

DO NOT WRITE IN ANY BARCODES.

Answer all questions.

If working is needed for any question it must be shown below that question.

Electronic calculators should be used.

If the degree of accuracy is not specified in the question, and if the answer is not exact, give the answer to three significant figures. Give answers in degrees to one decimal place.

For  $\pi$ , use either your calculator value or 3.142.

At the end of the examination, fasten all your work securely together.

The number of marks is given in brackets [ ] at the end of each question or part question.

The total of the marks for this paper is 56.

This document consists of 11 printed pages and 1 blank page.



On Monday the temperature was – 3°C. On Tuesday the temperature fell by 5°C. Write down the temperature on Tuesday.	and
Write down the temperature on Tuesday.	
Answer °C [1]	- 1
Write 0.00387 in standard form.	
Answer[1]	.]
The diagram is an accurate net for a solid shape.  Write down the geometrical name for this solid shape.	
Answer[1]	.]

\_\_\_\_\_ km [1]

www.xtrapapers.com

	Sophie invests \$450 at a rate of 1.5% per year <b>simple</b> interest.	ocar.
	Calculate the interest she earns after 8 years.	VaC <sub>almbi</sub>
	Answer \$	[2]
	$A$ $\cdot$	• B
1	U <b>sing a straight edge and compasses only</b> , construct the locus of	Engints which are equidistant from
I	point $A$ and from point $B$ .	points which are equidistant from
	Show clearly all your construction arcs.	[2]

7 A box is 12 cm high, correct to the nearest centimetre.

Complete the statement about the height, h cm, of the box.

×		iers
4	*	
	0	
	.O.	
•	00	_

Answer 
$$\leq h \leq$$
 [2]

8 The metal used to make a coin is a mixture of steel and copper.

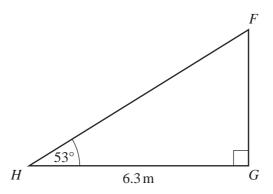
The ratio mass of steel: mass of copper is 108:7.

The coin has a total mass of 230 milligrams.

Calculate the mass of copper in this coin.

Answer	milligrams	[2]
--------	------------	-----

9



NOT TO SCALE

Calculate the length FG.

Answer m [2]

Write down your answer

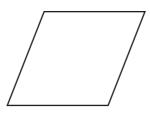
(a) as it appears on your calculator,

Angwar(a)	Γ1
Answer (u)	   1

**(b)** correct to 4 significant figures.

Answer(b)	[1]
12.10.1.0.	 LŤ.

11 (a)

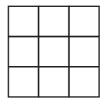


The diagram shows a rhombus.

Draw all the lines of symmetry.

[2]

**(b)** 



Shade **two** squares in the diagram above so that the figure has **one** line of symmetry and **no** rotational symmetry. [1]

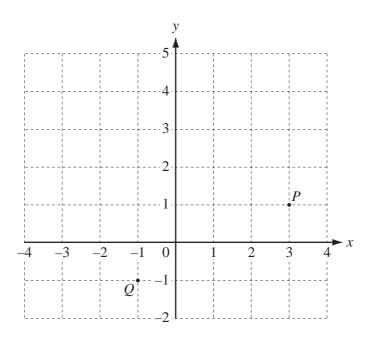
12 Solve the simultaneous equations.

$$3x + y = 18$$

$$4x - 2y = 34$$

$$Answer x =$$

$$y =$$
 [3]



The points P ( 3 , 1 ) and Q (-1 , -1) are marked on the grid.

(a) Write down the vector  $\overrightarrow{QP}$ .

$$Answer(a) \overrightarrow{QP} = \left( \qquad \right)$$
 [1]

**(b)** R and S are two more points.

$$\overrightarrow{PR} = \begin{pmatrix} -2\\1 \end{pmatrix}$$
 and  $\overrightarrow{PS} = 3 \overrightarrow{PR}$ .

(i) Write down the vector  $\overrightarrow{PS}$ .

$$Answer(b)(i) \overrightarrow{PS} = \left( \begin{array}{c} \\ \end{array} \right)$$
 [1]

(ii) Mark the point S on the grid.

[1]

14	Simp	lify	the	foll	lowing.
	~		****		

(a)	$8^0$
(a)	0

Answer(a)	[1]
III is iver (a)	 L*.

**(b)** 
$$(x^5)^2$$

(c) 
$$p^{-3} \div p^4$$

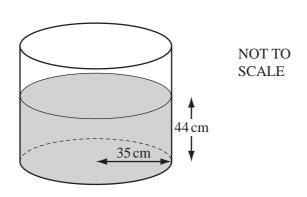
**15** A tourist changes \$900 to euros (€) when the exchange rate is €1 = \$1.356.

Calculate the amount he receives.

Give your answer correct to 2 decimal places.

$$Answer \in \qquad [3]$$

16	(a) Write down all the common factors of 3	<b>8</b> 30 and 42.	WANN. POR	trapapers.c
	Answer(a)			[2]
	<b>(b)</b> Write down the smallest number which	is a multiple o	f both 12 and 18.	
		Answer(b)		[2]
17	Simon has ten cards, numbered 1 to 10. He chooses a card at random.			
	Write down the probability that the number of	on the card is		
	(a) 8,			
		Answer(a)		[1]
	<b>(b)</b> 12,			
		Answer(b)		[1]
	(c) an odd number,			
		Answer(c)		[1]
	(d) not a multiple of 3.			
		Answer(d)		[1]



A cylindrical tank, with radius 35 cm, is filled with water to a depth of 44 cm.

(a) Calculate the area of the base of the tank.

Answer(a) 
$$cm^2$$
 [2]

**(b)** Calculate the volume of water in the tank.

(c) Change your answer to part (b) into litres.

## 19 In this question, you must show all the steps in your working.

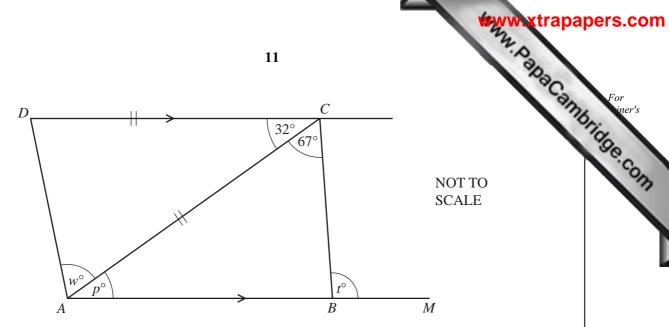
Without using a calculator, find the value of

(a) 
$$1\frac{1}{3} \div 2\frac{4}{5}$$
,

**(b)** 
$$\frac{13}{15} + \frac{3}{5}$$
.

Give your answer as a mixed number.





The diagram shows a quadrilateral ABCD with DC parallel to AB.

(	a)	Write down the	geometrical	name for a d	nuadrilateral	with onl	v one	pair of	narallel si	ides.
١,	.,	William GO Will till	Scomonical	manne non a c	quadriacciai	WILLIA OHI	, 0110	pan or	pararrer	iucs.

**(b)** ABM is a straight line and DC = AC. Angle  $DCA = 32^{\circ}$  and angle  $ACB = 67^{\circ}$ .

Find the values of p, t and w, giving a reason for each answer.

Answer (b) $p =$	}	ecause	 	
				[2]

12

**BLANK PAGE** 

Permission to reproduce items where third-party owned material protected by copyright is included has been sought and cleared where possible. Every reasonable effort has been made by the publisher (UCLES) to trace copyright holders, but if any items requiring clearance have unwittingly been included, the publisher will be pleased to make amends at the earliest possible opportunity.