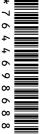


UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS International General Certificate of Secondary Education

CANDIDATE NAME					
CENTRE NUMBER			CANDIDATE NUMBER		



MATHEMATICS 0580/12

Paper 1 (Core) May/June 2012

1 hour

Candidates answer on the Question Paper.

Additional Materials: Electronic calculator Geometrical instruments

Mathematical tables (optional) 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 π , 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.



1	Work out the value of	$\frac{48}{19.1 - 3.5 \times 4.6}$. .			
				Answer <u>.</u>		[1]
2	Write the following in o	order of size, sta	arting with	the smallest.		
		0.83	$\frac{5}{6}$	82%	$\frac{23}{28}$	
		Answer	<	<	<	[2]
3	The ferry from Helsink The journey takes 28 ho Work out the day and t	ours 45 minutes			a Tuesday.	
					Time	[2]
4		T F	RIGONO	OMETRY		
	From the above word, v	write down the l	etters which	h have		
	(a) exactly two lines of	of symmetry,				
				Answer(a)		[1]
	(b) rotational symmetr	ry of order 2.				
				Answer(b)		[1]

5 The table shows the average monthly temperatures in Beijing.

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Use

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Average temperature (°C)	-4.6	-2.2	4.5	13.1	19.8	24.0	25.8	24.4	19.4	12.4	4.1	-2.7

(a) Work out how many degrees higher the temperature is in December than in January.

1 ()	00	Г17	
Answer(a)	٠(,		
1100 11 01 (00)	 _	1 * 1	

(b) Find the range.

$$\mathbf{6} \qquad \mathbf{a} = \begin{pmatrix} 5 \\ -3 \end{pmatrix} \qquad \mathbf{b} = \begin{pmatrix} -2 \\ 7 \end{pmatrix}$$

Work out $3\mathbf{a} + \mathbf{b}$.

$$1\frac{1}{2} + \frac{1}{3} + \frac{1}{4} = \frac{p}{12}$$

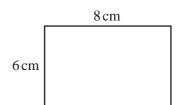
Work out the value of p.

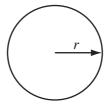
Show all your working.

$$Answer p =$$
 [2]

8	A lake has an area of 63 800 000 000 square metres.							
	Write this area in square kilometres, correct to 2 significant figures.							
	Answer km^2 [2]							
9	(a) Simplify $a^{-3} \times a^{8}$.							
	Answer(a)							
	Answer(b) [1]							
10	The number of people, n , who attended a concert was 12 600 to the nearest 100.							
	Complete the statement about <i>n</i> .							
	Complete the statement about n.							
	Answer $\leq n \leq 1$ [2]							
11	Keiko travels from Tokyo to London for the Olympic Games. On the internet, a flight costs £767.							
	(a) Use the exchange rate $£1 = 143$ Japanese Yen to find the cost of the flight in Japanese Yen.							
	Answer(a) Yen [1] (b) Write your answer to part (a) in standard form.							
	Answer(b)[1]							

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The perimeter of the rectangle is the same length as the circumference of the circle.

Calculate the radius, r, of the circle.

Answer r =	 cm	[3]

13 (a) Factorise $xy - y^2$.

(b) Solve 4x - 7 = 12.

$$Answer(b) x =$$
 [2]

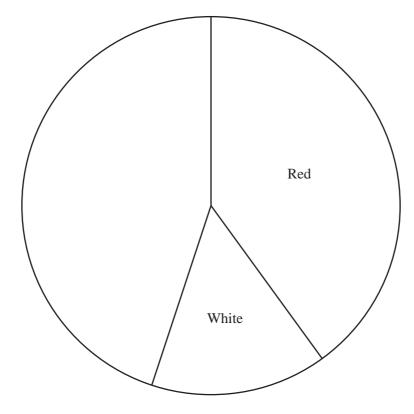
							()					
14	Scatter diagrams are drawn to compare sets of data from each team in a hockey league during a year.												
Write down the type of correlation you would expect to see when the data recorded is													
	(a)	the number	er of game	es won a	and the	total p	oints	scored	,				
													 [1]
	(b)	the number	er of game	es drawr	n and th	ie avei	rage he	eight o	f the t	eam,			
								A	Inswer	<i>(b)</i>			 [1]
	(c)	the number	er of goals	scored	and the	e final	positi	on in t	he leag	gue.			
								A	nswer	·(c)			 [1]
15			F				,	1	,			1	
											<u> </u>	: : : : :	
											<u> </u>	 	
								 	: 				
				 -						 	 		
						 			1	1 1 1 1		1	
	The	e diagram sl	hows a qua										
	(a)	Write dov	vn the mat	hematic	cal nam	e of th	ne qua	drilate	ral.				
						An	ıswer((a)					 [1]
	(b)	Find the a	rea of the	quadril	ateral a	nd giv	e the i	units.					
								Ar	ıswer(<i>b)</i>			 [2]

16 The shirt colour of the teams in a football league are shown in the following table.

Colour	Frequency
Red	8
White	3
Blue	7
Gold	2

The pie chart shows some of this information.

The sectors for red shirts and white shirts have been drawn.



(a) Calculate the angle of the sector for blue shirts.

Answer(a) [2]

(b) Complete the pie chart.

[1]

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				8		
17	Solve the sim	ultaneous equations.	6x + 2y = 22 $4x - y = 3$			
				Answer x =		
				<i>y</i> =		[3]
18	The taxi fare	in a city is \$3 and th	en \$0.40 for eve	ery kilometre trave	lled.	
	(a) A taxi fa	are is \$9.				
	How far	has the taxi travelled	1?			
				Answer(a)	kr	n [2]

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(b) Taxi fares cost 30% more at night.

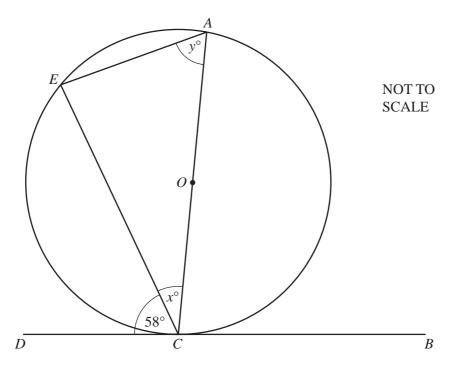
How much does a \$9 daytime journey cost at night?

[2]

Answer(b) \$ _____

Examiner's Use 19

For Examiner's Use



AC is a diameter of a circle, centre O.

BCD is a tangent to the circle and E is a point on the circumference. Angle $ECD = 58^{\circ}$.

Work out the value of

(a) x,

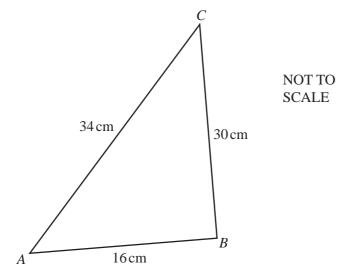
$$Answer(a) x =$$
 [2]

(b) *y*.

$$Answer(b) y =$$
 [2]

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For Examiner's Use



(a) Write down all your working to show that angle ABC is a right angle.

Answer(a)

[2]

(b) Use trigonometry to calculate angle *CAB*.

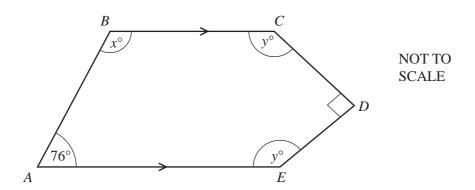
Answer(b) Angle CAB = [2]

21	(a)	Show that the sum of the interior angles of a regular pentagon is 5	540°
	` '		

Answer(a)

[2]

(b)



The diagram shows a pentagon *ABCDE*. *BC* is parallel to *AE* and angle *CDE* is a right angle.

Find the values of x and y.

Answer(b) x =

y = [3]

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