



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

CANDIDATE NAME				
CENTRE NUMBER		CANDIE NUMBE		

**MATHEMATICS** 

0580/12

Paper 1 (Core)

October/November 2011

1 hour

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.



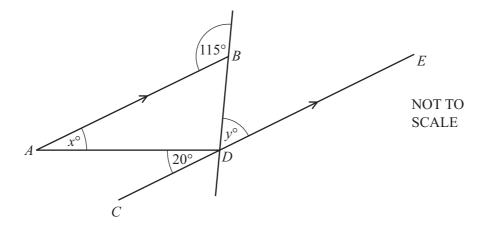
1	The temperature on Monday is 3 °C. On Tuesday it is 5 °C lower.	
	Find the temperature on Tuesday.	
		Answer °C [1]
2	Joseph changed 120 New Zealand dollars (NZ\$) into A was $NZ\$1 = A\$0.796.$ Calculate the exact amount he received.	Australian dollars (A\$) when the exchange rate
		Answer A\$[1]
3	A bus leaves a port every 15 minutes, starting at 09 00. The last bus leaves at 17 30.  How many times does a bus leave the port during one of the control o	
		Answer[2]
4	Write the following in order of size, starting with the s	mallest.
	$\frac{9}{8}$ 1.2 115%	$1\frac{1}{6}$
	Answer	< [2]

5	Mortar is a mixture of cement, sand and lime in the ratio	For Examine
	cement: sand: lime = $1:5:2$ .	Use
	Calculate how much sand there is in a 12 kg bag of this mortar.	
	August 1. (2)	
	Answer kg [2]	
6	Find the cube root of 96. Give your answer correct to 2 decimal places.	
	Answer[2]	
7	Write these numbers in standard form.	
	(a) 734 000 000	
	Answer(a)[1]	
	<b>(b)</b> 0.000587	

8 The population, <i>P</i> , of Brunei in 2008 was 400 000 correct to the nearest 1000. Complete the statement about the value of <i>P</i> .							
	Ans	swer		≤ <i>P</i> <		[2]	
9	Use your calculator to find the value of (a) $3^0 \times 2.5^2$ , (b) $2.5^{-2}$ .		Answer(a)			[1]	
			Answer(b)			[1]	

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For Examiner's Use



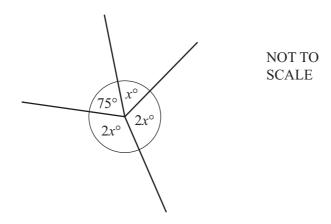
In the diagram, *AB* is parallel to *CDE*. Find the value of

**(a)** *x*,

**(b)** *y*.

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

11



(a) For the diagram above, write down an equation in x.

Answer(a) [1]

**(b)** Solve your equation.

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

12	Jiwan incorrectly wrote	$1 + \frac{1}{1}$	- +	_ 1	+ 1 :	$=1\frac{3}{1}$ .
		2		3	4	9

Show the correct working and write down the answer as a mixed number.

Answer	[3]
111151101	 ارحا

13 Solve these simultaneous equations.

$$5x - 2y = 17$$
$$2x + y = 5$$

$$Answer x =$$

$$y = [3]$$

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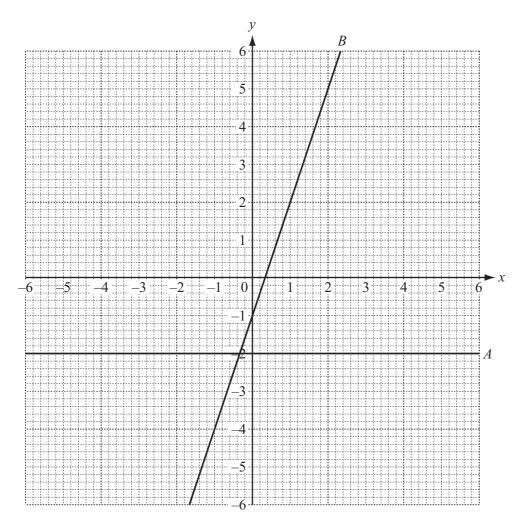
(., ., .,	ete the table for her results.			
	Colour	Frequency	Relative frequency	
	Red	19		
	Yellow			
	Blue	28		
				] [2
(b) Gita pio	cks a counter at random fro	m the same bag.		[:
_	cks a counter at random fro			] [:
_		likely to pick?	nswer(b)	
_		likely to pick?	nswer(b)	
Which		likely to pick?	nswer(b)	
Which  A cruise shi	colour counter is she most	likely to pick?	nswer(b)	
Which  A cruise shi  [1 knot is 1.	p travels at 22 knots.	likely to pick?	nswer(b)	[2
Which  A cruise shi  [1 knot is 1.	p travels at 22 knots.  852 kilometres per hour.]	likely to pick?	nswer(b)	
Which  A cruise shi  [1 knot is 1.	p travels at 22 knots.  852 kilometres per hour.]	likely to pick?	nswer(b)	
Which  A cruise shi  [1 knot is 1.	p travels at 22 knots.  852 kilometres per hour.]	likely to pick?	nswer(b)	

Answer \_\_\_\_ m/s [3]

16	(a)	Wri	te down a common multiple of 8 and 14.	
			Answer(a)[1]	
	(b)	(i)	Complete the list of factors of 81.	
			1,, ,, , 81 [2]	
		(ii)	Write down the prime factor of 81.	
			<i>Answer(b)</i> (ii)[1]	

**17** 

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The diagram shows two straight lines, A and B, drawn on a grid.

(a) Write down the equation of line A.

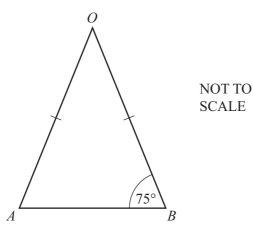
[1]	]	
	1	[1]

- **(b)** The equation of line B is y = 3x 1.
  - (i) Draw a line parallel to line B that passes through the point (0, 2). [1]
  - (ii) Write down the equation of your line in the form y = mx + c.

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

18

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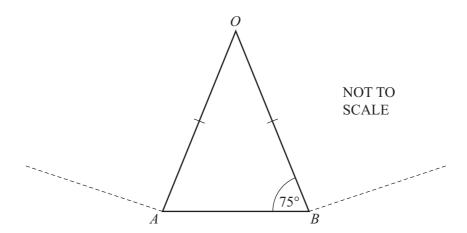


(a) Triangle AOB is isosceles. OA = OB.

Calculate angle AOB.

$$Answer(a)$$
 Angle  $AOB =$  [1]

**(b)** 



AB is one side of a regular polygon with n sides.

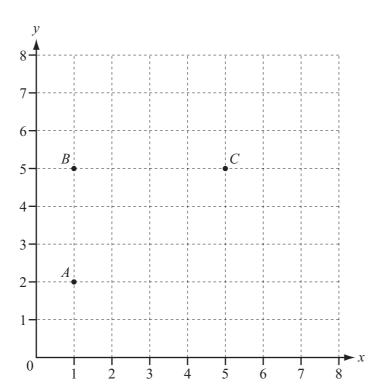
(i) Calculate n.

Answer(b)(i) n = [2]

(ii) Find the size of an interior angle of this polygon.

*Answer(b)*(ii) \_\_\_\_\_ [1]

19 (a)



Three vertices of the quadrilateral ABCD are shown in the diagram.

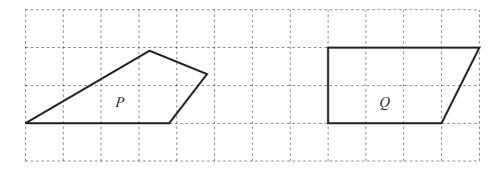
(i) Write down the co-ordinates of the point B.

Answer(a)(i) (		) [1]
11113 WCI (U)(1) (	,	<i>)</i> [1]

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- (ii) On the grid, plot and label the point D so that quadrilateral ABCD has rotational symmetry of order 2. [1]
- (iii) Draw the quadrilateral *ABCD*.

  Draw in all the lines of symmetry on your quadrilateral. [1]
- **(b)** Write down the mathematical names of these quadrilaterals.



Answer(b) P Q [2]

Question 20 is printed on the next page.

20 In a survey of 60 cars, the type of fuel that they use is recorded in the table below. Each car only uses one type of fuel

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Eac	in car only uses one type of	or ruer.			
	Petrol	Diesel	Liquid Hydrogen	Electricity	
	40	12	2	6	
(a)	Write down the mode.				•
			Answer(a)		[1]
(b)	Olav drew a pie chart to	illustrate these figures	3.		
	Calculate the angle of the	ne sector for Diesel.			
			Answer(b)		[2]
(c)	Calculate the probability	y that a car chosen at ra	andom uses Electricity	<i>7</i> .	

[2]

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Write your answer as a fraction in its simplest form.