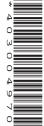


Cambridge International Examinations

Cambridge International General Certificate of Secondary Education

MATHEMATIC	October/Nevember	80/11
NUMBER	NUMBER	
CENTRE	CANDIDATE	
CANDIDATE NAME		



October/November 2015 Paper 1 (Core)

1 hour

Candidates answer on the Question Paper.

Additional Materials: Electronic calculator 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 an HB pencil for any diagrams or graphs.

Do not use staples, paper clips, 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.

The syllabus is approved for use in England, Wales and Northern Ireland as a Cambridge International Level 1/Level 2 Certificate.



1	Write these numbers in order of size, starting with the smallest.						
	5.024 0.524 5.204 5.0204						
	Answer <						
2	At midnight the temperature in Newtown was -8 °C. At noon the next day the temperature in Newtown was 9 °C.						
	Work out the rise in temperature from midnight to noon.						
	<i>Answer</i> °C [1						
3	Simplify $\frac{r^6}{r^2}$.						
	<i>Answer</i> [1						
4	(a) Work out $\frac{5}{12}$ of 168.						
	<i>Answer(a)</i> [1						
	(b) Write $\frac{3}{8}$ as a decimal.						
	Answer(b)[1						

5 Calculate.

(a)
$$3.2 \times (5.7 - 1.3) + 4.8$$

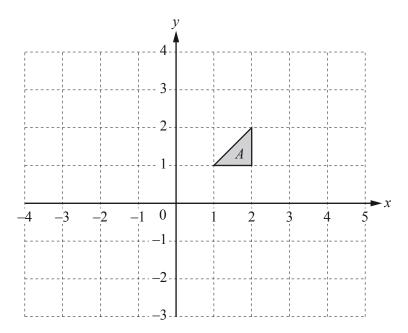
(b)
$$\sqrt{2.54 - 0.85}$$

$$\mathbf{p} = \begin{pmatrix} 4 \\ -2 \end{pmatrix} \qquad \mathbf{q} = \begin{pmatrix} -1 \\ 3 \end{pmatrix}$$

Work out $3\mathbf{p} - \mathbf{q}$.

Answer
$$\left(\begin{array}{c} \end{array}\right)$$
 [2]

7



Draw the image of shape A after a translation by the vector
$$\begin{pmatrix} 2 \\ -3 \end{pmatrix}$$
.

[2]

	Pip and Ali share \$785 in		_						
	Work out Pip's share.								
						Ans	wer\$		
)	Jim scores the following	marks in	8 tests.						
	7	8	8	y	6	9	10	5	
	His mean mark is 7.5.								
	Calculate the value of <i>y</i> .								
						Answ	$er y = \dots$		
			1 : :0			1		$\sqrt{3.9} \times 29$	0.3
0	By writing each number of	correct to	I signifi	icant fig	ure, esti	mate the	value of	$\frac{\sqrt{3.9 \times 29}}{8.9 - 2.7}$	7
10	By writing each number of Show all your working.	correct to	l signifi	icant fig	ure, esti	mate the	value of	8.9 - 2.7	7
.0	By writing each number of Show all your working.	correct to	I signifi	icant fig	ure, esti	mate the	e value of	$\frac{\sqrt{3.9 \times 29}}{8.9 - 2.7}$	7
10	By writing each number of Show all your working.	correct to	I signifi	icant fig	ure, esti	mate the	e value of	$\frac{\sqrt{3.9 \times 29}}{8.9 - 2.7}$	7
10	By writing each number of Show all your working.	correct to	1 signifi	icant fig	ure, esti	mate the	value of	$\frac{\sqrt{3.9 \times 29}}{8.9 - 2.7}$	7
10	By writing each number of Show all your working.	correct to	1 signifi	icant fig	ure, esti	mate the	e value of	8.9 - 2.7	7

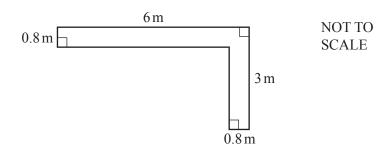
11	Without using a calculator, work out	$\frac{2}{5}$ ÷	$\frac{3}{4}$	
----	--------------------------------------	-----------------	---------------	--

Give your answer as a fraction.

You must show each step of your working.

Answer	 [2]

12



Leah is making a path in her garden using gravel.

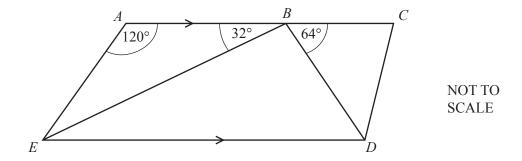
The diagram shows the path.

A bag of gravel covers an area of $0.5 \, \text{m}^2$.

Work out the number of bags of gravel Leah must buy to make the path.

6

13



The diagram shows quadrilateral ACDE. AC is parallel to ED and B is a point on AC. Angle $EAB = 120^{\circ}$, angle $ABE = 32^{\circ}$ and angle $CBD = 64^{\circ}$.

(a) Work out angle *EBD*.

$$Answer(a)$$
 Angle $EBD = ...$ [1]

(b) Work out angle *AEB*.

$$Answer(b)$$
 Angle $AEB = \dots$ [1]

(c) Complete this statement.

14 Work out the size of one interior angle of a regular 15-sided polygon.

15 Chico has a bag of sweets.

He takes a sweet from the bag at random.

The table shows the probabilities of taking each flavour of sweet.

Flavour	Lemon	Lime	Strawberry	Blackcurrant	Orange
Probability	0.15	0.22		0.18	0.24

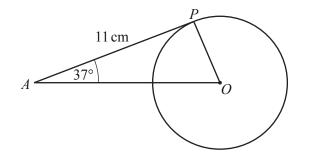
(a) Complete the table.

[2]

(b) Find the probability that the sweet is lemon or lime.

Answer(b) [1]

16



NOT TO SCALE

In the diagram, AP is a tangent to the circle at P. O is the centre of the circle, angle $PAO = 37^{\circ}$ and AP = 11 cm.

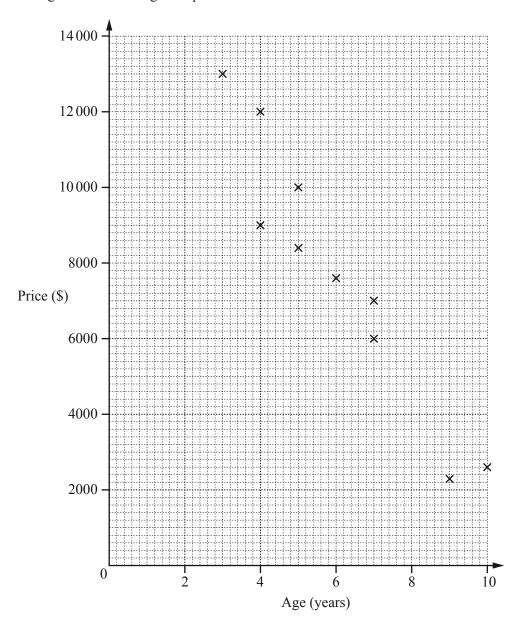
(a) Write down the size of angle *OPA*.

(b) Work out the radius of the circle.

Answer(b) cm [2]

17 Amir looks at adverts for the same model of car.

The scatter diagram shows the age and price of each car.



(a) What type of correlation is shown on the scatter diagram?

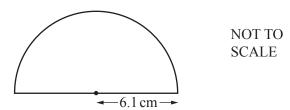
Answer(a) [1]

(b) Draw a line of best fit on the scatter diagram. [1]

(c) Use your line of best fit to estimate the price of a car that is 8 years old.

9

18



A protractor is a semi-circle of radius 6.1 cm.

Calculate the **perimeter** of the protractor.

Answer		cm	[3]
--------	--	----	-----

19 (a)
$$s = 4t + 3u$$

Calculate s when t = 2.6 and u = -0.4.

$$Answer(a) s = \dots [2]$$

(b) Solve 5x - 7 = 10.

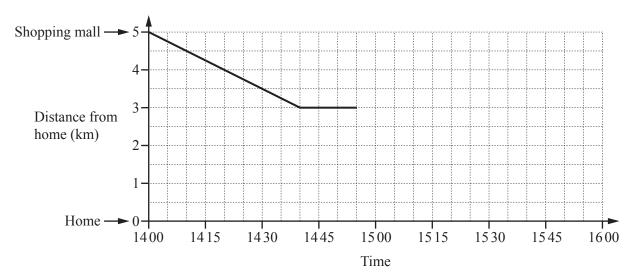
Answer(b)
$$x =$$
 [2]

20 (a) Maria travels by bus to the shopping mall. She leaves home at 11 50 and arrives at the shopping mall at 12 17.

How many minutes does it take Maria to travel from home to the shopping mall?

Answer(a) min [1]

(b)



Maria walks home from the shopping mall. The travel graph shows part of her journey.

(i) Maria stops at her friend's house on the way home.

How far from the shopping mall does her friend live?

Answer(b)(i) km [1]

(ii) Maria leaves her friend's house at 1455. She walks the rest of the way home at a constant speed of 4km/h.

Complete the travel graph.

[2]

21	(a)	Sara works f She earns \$1			ch week.				
		Calculate ho	w muc	h she ea	rns in one	e week.			
								Answer(a) \$	[1]
	(b)	Sara invests	\$750 f	or 3 year	rs at a rat	e of 2.4%	per ye	ar compound interest.	
		Calculate the	e total a	ımount s	she will h	ave at the	e end of	the 3 years.	
								Answer(b) \$	[3]
22	(a)	Write down	the nex	t term ii	n each of	these seq	uences.		
		(i) 5	9	13	17				
		•		1.0	2.4			Answer(a)(i)	[1]
		(ii) 3	6	12	24	• • •			
								Answer(a)(ii)	[1]
	(b)	Here are the	first fo	ur terms	s in a diffe	erent sequ	ience.		
					2	7	12	17	
		Find an expr	ression	for the <i>r</i>	th term o	of this seq	uence.		
								Answer(b)	[2]

12

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