Surname

Centre Number

0

Other Names

GCSE

4370/06

MATHEMATICS – LINEAR PAPER 2 HIGHER TIER

A.M. MONDAY, 17 June 2013

2 hours

ADDITIONAL MATERIALS

A calculator will be required for this paper.

A ruler, a protractor and a pair of compasses may be required.

INSTRUCTIONS TO CANDIDATES

Use black ink or black ball-point pen. Do not use gel pen or correction fluid.

Write your name, centre number and candidate number in the spaces at the top of this page.

Answer **all** the questions in the spaces provided.

If you run out of space, use the continuation page at the back of the booklet, taking care to number the question(s) correctly.

Take π as 3.14 or use the π button on your calculator.

INFORMATION FOR CANDIDATES

You should give details of your method of solution when appropriate.

Unless stated, diagrams are not drawn to scale.

Scale drawing solutions will not be acceptable where you are asked to calculate.

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

You are reminded that assessment will take into account the quality of written communication (including mathematical communication) used in your answer to question 3(b)(ii).



For Examiner's use only				
Question	Maximum Mark	Mark Awarded		
1	3			
2	2			
3	14			
4	8			
5	7			
6	3			
7	4			
8	7			
9	3			
10	5			
11	5			
12	4			
13	7			
14	5			
15	6			
16	1			
17	6			
18	2			
19	8			
TOTAL				



1.	The table below sh	ows the shoe sizes of 20	people.	Examiner only
	Γ	Shoe size	Number of people	
	_	38	3	
	_	39	9	
	-	40	5	
	_	41	3	
	Calculate the mear	n shoe size.		
				4370
				[3]
2.	A fair coin and a fa Calculate the prob	air six-sided dice are thro ability of obtaining a hea	own together. ad and a two.	
				[2]
	0 3	© WIEC CRAC 1:4	370-06)	Turn over

(a)	Miriam went to an exchange bureau to get some Pakistan rupees for her holiday.
	0000000 0000000 0000000 550000 5000 FIVE THOUSAND RUPEES 00000000 0000000 0000000 0000000 000000
	She exchanged £540 for 85000 Pakistan rupees. Complete the statement below, giving your answer correct to two decimal places.
(b)	'Exchange rate: £1 buys Pakistan rupees' Miriam knows that when it is 1p.m. in London it is 6p.m. local time in Karachi, Pakistan Miriam is booked onto a flight leaving London on Tuesday at 13:50.
(b)	'Exchange rate: £1 buys Pakistan rupees' [3] Miriam knows that when it is 1p.m. in London it is 6p.m. local time in Karachi, Pakistan Miriam is booked onto a flight leaving London on Tuesday at 13:50. The flight time is 7 hours 51 minutes. (i) On which day and at what local time should Miriam land in Karachi?

(ii)	You will be assessed on the quality of your written communication in this part of the question.
	Miriam's flight actually arrived 7 hours 45 minutes after departure. The aeroplane flying speed between London and Karachi was 434 knots. Given that 1 knot is 1.85 km/h, calculate the flying distance between London and Karachi. Give your answer in kilometres.
•••••	
•••••	
•••••	
•••••	
•••••	
•••••	
	[7]



Approximate reports.	conversions are often used t	o give a reading in more than	one unit in scientific
Use the infor	mation given below to compl	ete the tables.	
<i>(a)</i>	degrees Celsius	degrees Fahrenheit	
	20	68	
	30	86	
	40	104	
	50		
	60	140	
	70	158	
(1)			[1]
			[1]
(b)	kelvin	degrees Celsius	[1]
(<i>b</i>)	kelvin 0	degrees Celsius	[1]
(b)	kelvin 0 100	degrees Celsius	[1]
(b)	kelvin 0 100 200	degrees Celsius 	[1]
(b)	kelvin 0 100 200 300	degrees Celsius 	[1]
(b)	kelvin 0 100 200 300 400	degrees Celsius	[1]
(b)	kelvin 0 100 200 300 400 500	degrees Celsius	[1]
(<i>b</i>)	kelvin 0 100 200 300 400 500	degrees Celsius	[1]
(b)	kelvin 0 100 200 300 400 500	degrees Celsius	[1]

(c)				1
	kelvin	degrees Celsius	degrees Fahrenheit	
	340			
				[5]

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5.	(a)	Solve $8x - 11 = 3x + 29$.	Exan on
	(b)	Factorise $7x + 49$.	[3]
			[1]
	(c)	Factorise $x^2 - 10x$.	
	(d)	Expand $2x(x+6)$.	[1]
	·····		[2]





9



The first 100 bags were outside the set of t	checked and it was found that a total of 1200 red bu	uttons had been
In the 600 bags of button 40% .	ns, it was found that the relative frequency of red butt	ons packed was
Calculate the relative free	quency of red buttons packed in the final 500 bags.	
		[7]

On the squared paper provided, draw the region which satisfies all of the following inequalities. 9. $y \leq 8$ $x + y \geq 2$ $y \geq 2x - 4$ Make sure that you clearly indicate the region that represents your answer. y 8 6 4 2 $\frac{1}{8}x$ 8 - 6 -4-20 2 4 6 -2 -4

12

Examiner only

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Turn over.

City planners need to know the difference in height between a building on one side of a road and a building on the other side of the road. The buildings are vertical and directly opposite each other.	d
 The horizontal road is 20 m wide. From the centre of the road between the buildings, the angle of elevation of the top of the building on one side is 72°, the top of the building on the other side is 38°. 	
Calculate the difference in the heights of the buildings.	
Space for diagram.	
	•
[5]

	2000	
 		[4]



b)	The smaller of the two versions of the logo costs ± 3.40 to paint with metallic gold paint. Calculate the cost of painting the larger version of the logo with the same metallic gold paint.
	[3]



18	
14.	Examiner only
In the UK, some soft drinks are sold in cans. 75% of all these cans are made of aluminium. In 2008, 5 billion aluminium cans were sold.	
Given that 1 billion is 1000 million, calculate how many of the cans that were sold in 200 not made of aluminium. Give your answer in standard form correct to two significant figures.)8 were
	[5]
1 8 © WJEC CBAC Ltd. (4370-06)	

Examiner only By factorising, solve the following quadratic equation. **15.** (a) $8x^2 + 18x - 5 = 0$ [3] Use the quadratic formula to solve the following quadratic equation, giving your answers correct to 2 decimal places. *(b)* $3x^2 - 5x - 7 = 0$ [3]

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A triangular flowe The gardener is go	erbed in a park is being prepared for planting bulbs. bing to lay compost over all the flowerbed to a depth of 12 cm.	
	~	
	4·6 m 5·8 m	
	6·4 m	
	Diagram not drawn to scale	
Calculate the volu	me of compost required.	
		[8]

Question number	Additional page, if required. Write the question numbers in the left-hand margin.	Examine only

