

GCSE Mathematics

Foundation tier -- Paper2



For this paper you must have: calculator mathematical instrument



Morning

1 hour 30 minutes

Instructions

Use black ink or black ball-point pen.

Draw diagrams in pencil. Fill in the boxes at the bottom of this page. Answer all questions.

You must answer the questions in the spaces provided.

Do not write outside the box around each page or on blank pages.

Do all rough work in this book.

In all calculations, show clearly how you work out your answer.

Information

The marks for questions are shown in brackets.

The maximum mark for this paper is 80.

You may ask for more answer paper, graph paper and tracing paper.

These must be tagged securely to this answer book.

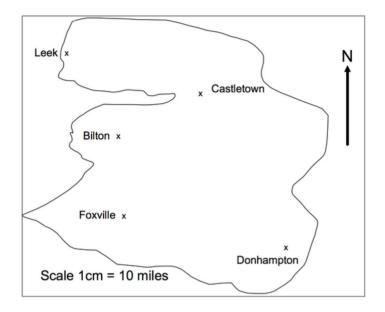
Advice

In all Calculations, show clearly how you workout your answer

/ Please write clearly, in block capitals, to allow character computer	
Centre number candidate number	
Surname	_
Forename(s)	_
Candidate signature	
	_ /

			Answer	all quest	ions in the s	paces pro	ovidec	ł.	
1	(a)	Order the	numbers fr	om smal	lest to larg	gest			
		3,	-2,	1,	-5,	-6	-8	9	
			Answe	าง					[1 mark]
1	(b)	Calculate	2.89 + 0.5						
									[1 mark]
			Answe	P					
1	(c)	How many n	ninutes are	in 4.45	hours?				[1 mark]
			Ansv	ver					_

2 This is a map of an island.



[2 marks]

A helicopter flies in a straight line from Leek to Donhampton.

(a) How far does the helicopter fly?

.....miles

(b) Write down the bearing of Donhampton from Leek.

[2 marks]

.....

Turn over for the next question

Turn over ▶



3 Three groups of people, A, B and C, have taken GCSE's test.

Here is information about the number of tests taken by the people in A.

[3 marks]

Group A

Key: 1 represents 5 people

One test	$\Delta\Delta\Delta\Delta$
Two tests	$\Delta\Delta\Delta\Delta\Delta$
Three tests	$\Delta \Delta \Delta$

Here is information about the number of tests taken by the people in B.

One test Half the number in A who have taken one test.

5 fewer than the number in A who have taken two tests. Two tests Three tests 10 more than the number in A who have taken three tests.

Complete this pictogram for the people in B.

Group B

-	rtey.	presents Speople
	One test	
	Two tests	
	Three tests	

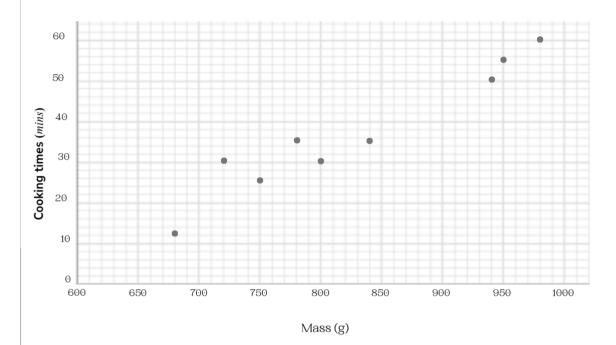
		[3 marks]
	· ·	
a) On a bus	, there are between 50 and 60 people.	
J, Ollabad	, there are between 30 and 00 people.	
	of adults to children is $5:4$	
The ratio		[2 marks]
The ratio	of adults to children is 5:4	[2 marks]
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The ratio	of adults to children is 5:4 It the total number of people on the bus.	
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Prepare 4 GCSEs

5 (a)	How many lines of symmetry does this shape have?	
	[1 mark]	
	[1 mark]	I
		,
5 (b)]	Find the common difference and the $\it n$ term for the sequence : 2, 5, 8, 11, 14,	1
5(b)]		1
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5 (c)	Factorise $x^2 - 2x - 24$	[2 marks]
	Answer	
5 (d)	Expand and simplify (2x - 2) (x + 3)	[2 marks]
	Answer	

This scatter diagram shows information about the cooking times of a variety of biscuits.



Here is some information about another four biscuits.

Mass (g) Cooking	750	850	700	900
time (mins)	35	50	20	55

[2 marks]

6 (a)Plot this information on the scatter diagram.

6 (b) What type of correlation does this scatter diagram show?

[1 mark]

Answer

[2 marks]

6 (c) Use the scatter diagram to estimate the cooking time of a biscuit which weighs 950g.

Answer _____minutes

7	(a)	Simplify 8a – 3a + a.
	(/	oninging oa oa a.

[1 mark]

7 (b). Calculate $\sqrt{81}$.

[1 mark]

Answer

7 (c) Circle the two prime numbers

[1 mark]

29,

59, 39, 69,

99



Do not write outside the

8 (a) A tank contains 40 litres of water.

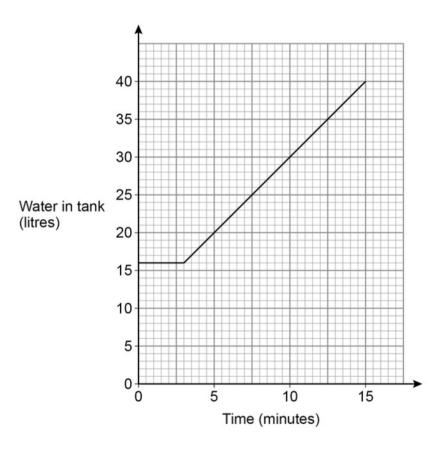
Water leaks out of the tank at a rate of 1.2 litres per minute.

The leak is stopped after 20 minutes.

Show that, when the leak is stopped, the tank contains 16 litres of water.

8 (b) The tank is refilled with water from a tap.

The graph shows the amount of water in the tank after the leak is stopped.



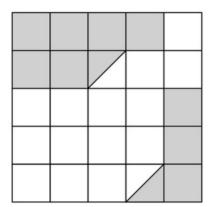
[3 marks]

[1 mark]

12

	Report		1
	minutes after the leak is stopped, the tap starts to refill the t		
The rate at wh	ich the tank refills is	litres per minute.	
(a) Simplify fully	7 CxC	[1	mark]
	Answer		
(b) Simplify fully		[1	mark
(b) Simplify fully 4	4m ÷ 2m		mark)
(b) Simplify fully 4 - (c) Simplify fully	4m ÷ 2m		mark)

10 (a) What percentage of this shape is shaded?



[2 marks]

10 (b)
$$x = 325 - 125$$

 $y = 15 * 15$

[2 marks]

Work out the value of x*y

Turn over for the next question

7

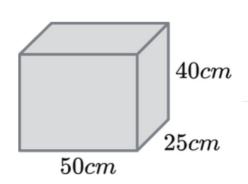
Prepare 4 GCSEs

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11 (a)	Work out the lowest common multiple (LCM) of 120 and 144	
		[2 marks]
	Answer	
11 (b)	Here is an identity. $a(3x - 10) = 24x + 8b$ Work out the values of a and b.	[3 marks]
-		
	a= b =	



12 The fuel tank from Jack's car is pictured below:



[4 marks]

The tank is currently ¼full. Jack wants to fill the tank.

Answer

Fuel costs £1.30per litre

(1l = 1000cm3)

How much will it cost Jack to fill his tank?

. –	

Turn over ▶



13	A marble is randomly selected from a bag containing 1 pink, 4 green, 3 yellow and		
	1 red marbles.		
	Determine the probability of getting:		
	a) a red marble		
	b) a green or yellow marble		
	c) a green marble		
	d) a green, yellow, red or pink marble		
	[4 marks]		
_			

14 (a)	A football team plays two matches. For the first match, 20 000 tickets ar Each ticket costs £22.50	
	Work out the total amount of money	from ticket sales for this match.
_		
_		
_		
_		
	Answer	
14 (b)	Circle the solid that has six vertices.	[1 mark]
	cone cuboid triangu	lar prism square-based pyramid
	Turn over for the ne	xt question

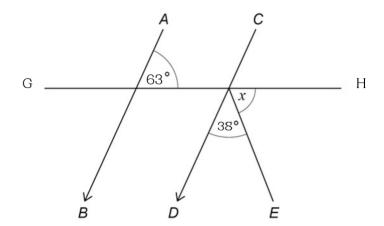
Prepare 4 GCSEs

. =	_ ,				
15	Eeshu sp	pends these amo	ounts in four sl	hops using £20 notes, £10 notes and £5 no	otes.
			Shop A	£75	
			Shop B	£45	
			Shop C	£125	
			Shop D	£50	
	In eac	ch shop she			
		pays the exact uses the smalle		umber of notes.	
	Worl	k out the total nu	ımber of each	note she uses.	[3 marks]
		_			
	-				
					_
		Number of £2			
		Number of £1 Number of £5			
		Mailinei. Of E	7 HOTER		

16

AB is parallel to CD.

GH is a straight line.



Not drawn accurately

Work out the size of

angle x	[3 marks]

Answer degrees

Turn over for the next question

6

						[1 mark]
17 The equation of a line is $y = 3x - 6$ Circle the coordinates of the y-intercept.						
	(0, -6)	(-6,	0)	(0, 3)	(3, 0)	
18	Convert 11.2 ki	lometres in	to miles.			[2 marks]
	Use 8 km = 5 m	niles				
	036 0 1011 - 0 111	mes				
		Answer _			miles	
19	The square ro	ot of x is 5				
	Circle the valu					[1 mark]
	on old the valu	0 01 %				
	256	3	625	125	654	

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box

20	The 5th term of a linear sequence is 17 The 6th term of the sequence is 21 Work out the 100th term of the sequence.	
		[3 marks]
	Answer	

Turn over ▶



21 (a)	Rearrange 4k = 4h - 4 to make the subject. h	[2 marks]
	Answer	
21 (b)	Here is triangle ABC A Not drawn accurately C 24 cm B	[3 marks]
A	ssume that angle ABC = 90°. Work out the length AC.	
	Answerom	

22	A straight line has gradient 8 and passes through the point (2, 10) Work out the equation of the line. Give your answer in the form $y = mx + c$	[3 marks]	Do not write outside the box
		-	
		_	
		- -	
		_	
	Answer		
	Turn over for the next question		



23	Here are five cards. 246813 One of the cards is removed. The mean of the numbers on the remaining four cards is 6 Which card was removed? You must show your working.	[3 marks]
	2	
	Answer	
	AnswerEND OF QUESTIONS	

