Collins

AQA GCSE Mathematics

SET A – Paper 2 Foundation Tier

F

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Materials

For this paper you must have:

calculator

- mathematical instruments

Instructions

- Use black ink or black ball-point pen. Draw diagrams in pencil.
- Answer **all** questions.
- You must answer the questions in the space provided.
- 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 use additional paper, graph paper and tracing paper.

Name:

Time allowed: 1 hour 30 minutes

1	Round 2.359 to 1 decimal place.						
	Circ	cle your answer.					
		2	2.3	2.36 2.4	4 2.35		
2	(a)	Convert 2.34 kg	into grams.				
		Circle your answer.					
						[1 mark]	
3HT HOLDER ONLY		0.234 g	23.4 g	234 g	2340 g		
	(b) Convert 6.4 m into cm.						
		Circle your answe	er.			[1 mark]	
COPYRIC		64 cm	640 cm	604 cm	0.64 cm		
IGITAL 3	(a)	Simplify $3x + 4y$	- <i>x</i> – 6 <i>y</i>				
JSE OF D		Circle your answ	er.			[1 mark]	
FORL		2x - 2y	4 <i>x</i> – 10 <i>y</i>	2 <i>x</i> + 10 <i>y</i>	2x + 2y		
3	(b)) Find the area of the rectangle.					
				3 <i>a</i>	7		
					4		
		Circle your answ	er.			[1 mark]	
		6 <i>a</i> + 8	3 <i>a</i> + 4	12 <i>a</i>	7 <i>a</i> 1	4 <i>a</i>	

4 All of the interior angles of this shape are equal.



Give the mathematical name of the shape.

[2 marks]

Answer

In total, Tim's chickens laid 27 eggs this week.

The pictogram shows the number of eggs Tim collected from Monday to Friday.

Day	Frequency
Monday	
Tuesday	
Wednesday	
Thursday	
Friday	
<u> </u>	

Key: C = 2 eggs

Tim collected the same number of eggs on Saturday and Sunday.

How many did he collect on Sunday?

[2 marks]

Answer

5

6 Find the coordinates of the **midpoint** of the line *AB*.



7 (b) Another week he saves £16 from his wage.

What percentage of his money did he spend that week?

[3 marks] Answer % Calculate $\frac{(2.3+4.9)^2}{2+\sqrt{8}}$ Write down all the figures on your calculator display. [2 marks] Answer (a) Doug is going to measure the height of some students in order to analyse any differences

Which of the following statements best describe Doug's data?

Tick **two** boxes.

between boys and girls.

Primary	
Secondary	
Discrete	
Continuous	
Controversial	

[1 mark]

9

8

	Describe how he could do this.	[1 mark]
(a)	Ikra writes down '2 + 3 × 4 – 8'	
	She says, 'the answer equals 12'.	
	Is Ikra correct?	
	Show your working.	[2 marks]
(b)	Hannah says, 'I can make the answer equal –10, just by including brackets'.	
	Show that Hannah is correct.	[1 mark]
Give	en that 2250 = $2 \times 3^a \times 5^b$	
Finc	the values of a and b.	[2 marks]
	<i>a</i> =	
	<i>b</i> =	

12 A film is 137 minutes long.

It starts at 7:14 pm

What time does it end?

Circle your answer.

[1 mark]

8:91 pm 9:29 pm 9:31 pm 8:51 pm

13 50 vegetarians were asked if they eat eggs or dairy products.



13 (a) Given that 21 said that they eat eggs, complete the Venn diagram.

[2 marks]

13 (b) Find the probability that a vegetarian chosen at random eats neither eggs nor dairy.

[2 marks]

Answer

14 Put the following in order from smallest to largest.

3 7 $\frac{1}{2}$ of $\frac{4}{5}$ 0.41 38.5% [2 marks] Answer Sean, Nicole and Jadyn are taking part in a long jump competition. Jadyn can jump $\frac{3}{5}$ of the distance that Sean can jump. Nicole can jump twice as far as Jadyn. Write the distances that Jadyn, Sean and Nicole can jump as a ratio in its simplest form. [3 marks] Answer

16 In the diagram, the numbers opposite each other are factor pairs of the number in the centre.



15

Put numbers in the diagram below, so that it follows the same rules.

You must not repeat any factor pairs.





20 A helicopter flies from a south-westerly direction so that it is an equal distance between the lighthouse and the cliffs.

When it is exactly 500 m from the yacht, it stops in a fixed position to rescue a seaman from the water.



Mark, with a cross, the exact position of the helicopter once it has stopped.

[3 marks]

21 The bookcase exerts a downward force of 3000 N.



Use the formula to find the pressure applied to the base of the bookcase.

[3 marks]

Answer N/m²

22 Pete's company produces metal fencing.

Different numbers of workers are available each day, but the company always runs an 8-hour shift.

The table shows the number of workers and length of fencing produced each day.

	Mon	Tue	Wed	Thu
Number of workers	3	5	8	5
Length of fence produced	645 cm	10.75 m	17.2 m	10.75 m

On Friday, Pete has 7 workers.

How many metres of metal fencing will the company produce on Friday?



Work out the area of the semicircle.

Circle your answer.



16π

4π

8π

32π

64π

[3 marks]

[1 mark]

Louise and Anita work in a café. 24

Louise takes 42 seconds to make a latte.

Anita takes 70 seconds to toast a teacake.

Louise says, 'I can make x lattes in the time it takes you to make y teacakes'.

Find the values of *x* and *y*.



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[2 marks]

26 Cathy wants to build a new driveway and have a loft conversion on her house.

She is told that:

A new driveway will add 6% on to the value of her house

A loft conversion will add a further 18% on to the value of her house

Cathy says, 'My house will be worth £180 000 if I have all of the work done'.

What is the current value of her house?

Give your answer to 3 significant figures.

[3 marks]

Answer £

27 There are 20 students in Anand's class.

He copies down this table from the board to show the heights of everyone in the class, but he has made one error in the frequency column.

Height, <i>h</i> (<i>cm</i>)	Frequency
140 < <i>h</i> ≤ 150	3
150 < <i>h</i> ≤ 160	6
160 < <i>h</i> ≤ 170	6
170 < <i>h</i> ≤ 180	4

The teacher says, 'An estimate for the mean height is 161 cm'.

Which class interval has an incorrect frequency?

You must show working to back up your answer.

[4 marks]

Answer



3y = 5x + 3x + y = 5



[4 marks]

x = _____

y = _____

28 (b) Find the equation of the line which is parallel to x + y = 5 and goes through the point (3, 4).

[2 marks]

Answer



Answer _____ cm/hour

END OF QUESTIONS