

GCSE Mathematics (1MA1) – Aiming for Grade 5 1H

Student-friendly mark scheme

Please note that this mark scheme is not the one used by examiners for marking scripts. It is intended more as a guide to good practice, indicating where marks are given for correct answers. As such, it doesn't show follow-through marks (marks that are awarded despite errors being made) or special cases.

It should also be noted that for many questions, there may be alternative methods of finding correct solutions that are not shown here – they will be covered in the formal mark scheme.

Some questions require all working to be shown; in such questions, no marks will be given for an answer with no working (even if it is a correct answer).

The following table shows the marks scored on average at certain grades on similar questions from live exams.

For example: A student who achieved a Grade 5 on similar questions from either the Summer 2023 or November 2023 exam sittings achieved on average 23.4 marks from these questions.

Grade	9	8	7	6	5	4	3
Mark	30.0	28.6	27.3	25.7	23.4	19.8	14.8

Answer all questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

- *1 (a) Write down the value of 5^0

1

1 mark

(1)

- (b) Write $\frac{2^5 \times 2^4}{2^3}$ in the form 2^n where n is an integer.

1 mark

$$\frac{2^{5+4}}{2^3}$$

$$= \frac{2^9}{2^3}$$

$$2^{9-3}$$

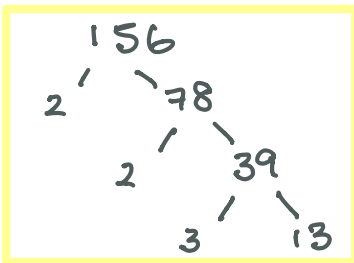
2⁶

Final mark

(2)

(Total for Question 1 is 3 marks)

- *2 (a) Write 156 as a product of its prime factors.



1 mark for complete method to find prime factors with no more than one error

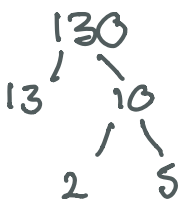
OR for sight of 2,2,3,13

2 × 2 × 3 × 13

Final mark

(2)

- (b) Find the highest common factor (HCF) of 156 and 130



$$156 = 2 \times 2 \times 3 \times 13$$

$$130 = 2 \times 5 \times 13$$

$$\text{HCF} = 2 \times 13$$

1 mark

26

Final mark

(2)

(Total for Question 2 is 4 marks)

- 3 The menu in a restaurant has starters, main courses and desserts.

There are 5 starters.

There are 12 main courses.

There are x desserts.

There are 420 different ways to choose one starter, one main course and one dessert.

Work out the value of x .

1 mark

$$5 \times 12 \times x = 420$$

$$x = \frac{420}{60}$$

$x =$

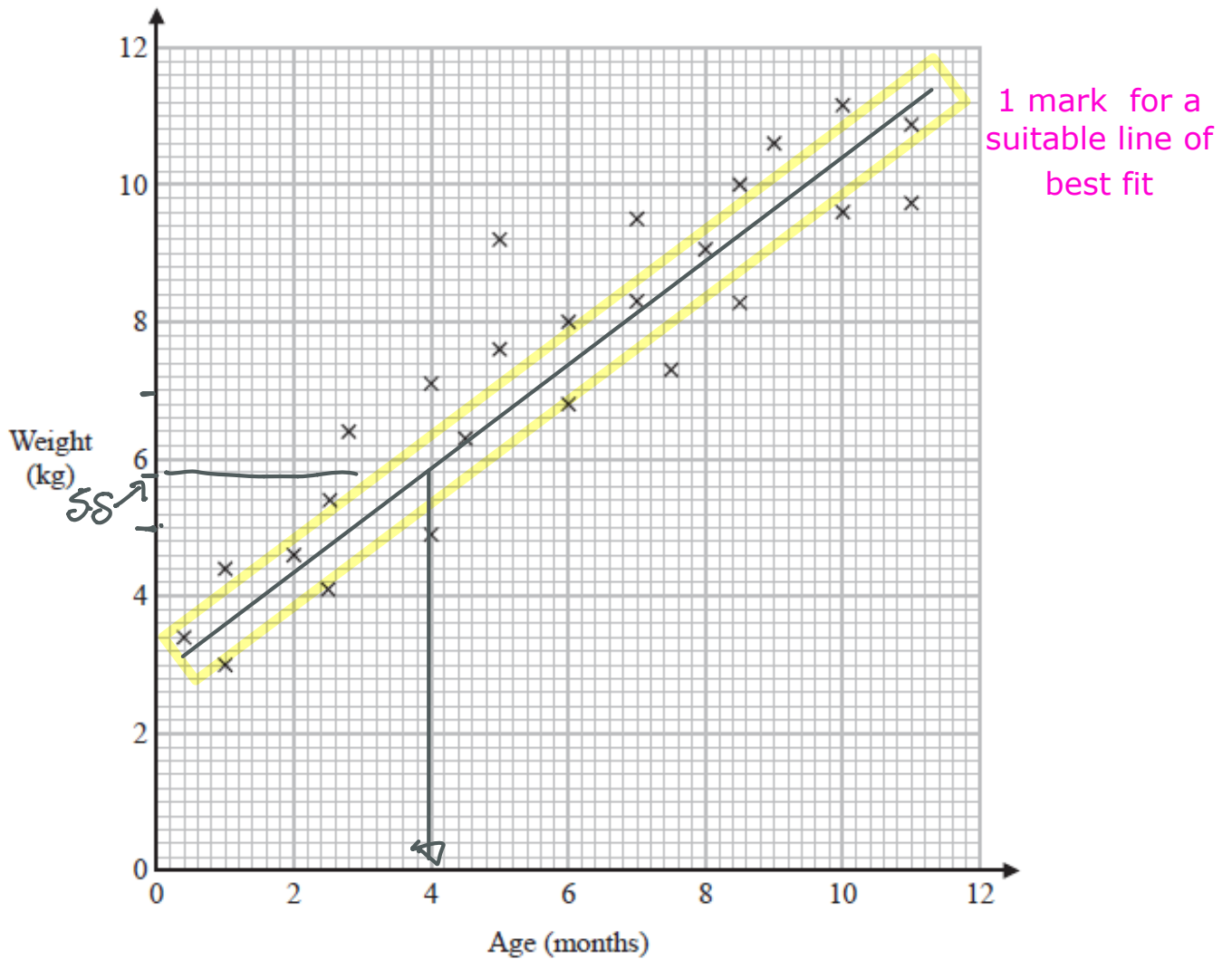
7

Final mark

(Total for Question 3 is 2 marks)

*4

The scatter graph shows information about the ages and weights of some babies.



(a) Describe the relationship between the age and the weight of the babies.

1 mark its a positive correlation, which means as they babies get older they weigh more

(1)

Another baby has a weight of 5.8 kg

(b) Using the scatter graph, find an estimate for the age of this baby.

Final mark 4 months

Range accepted 2.5 to 4.5

(2)

(Total for Question 4 is 3 marks)

*5 Work out $7\frac{3}{8} - 2\frac{1}{2}$

Give your answer as a mixed number.

$$7\frac{3}{8} = \frac{59}{8}$$

$$2\frac{1}{2} = \frac{5}{2}$$

$$\frac{59}{8} - \frac{5}{2}$$

1 mark

$$= \frac{59}{8} - \frac{20}{8}$$

$\times 4$

1 mark

$$= \frac{39}{8}$$

8, 16, 24, 32

$$4\frac{7}{8}$$

Final mark

(Total for Question 5 is 3 marks)

*6 Work out 6.3×2.4

1 mark

	60	3
20	1200	60
4	240	12

$$\begin{array}{r} 1200 \\ 240 \\ 60 \\ 12 \\ \hline 1512 \end{array}$$

1 mark for digits 1512

so $63 \times 24 = 1512$

$$6.3 \times 2.4 = 15.12$$

Final mark

(Total for Question 6 is 3 marks)

- 7 Alice recorded the number of cars going into a village on each of 80 days.
The incomplete table and the incomplete box plot give information about her results.

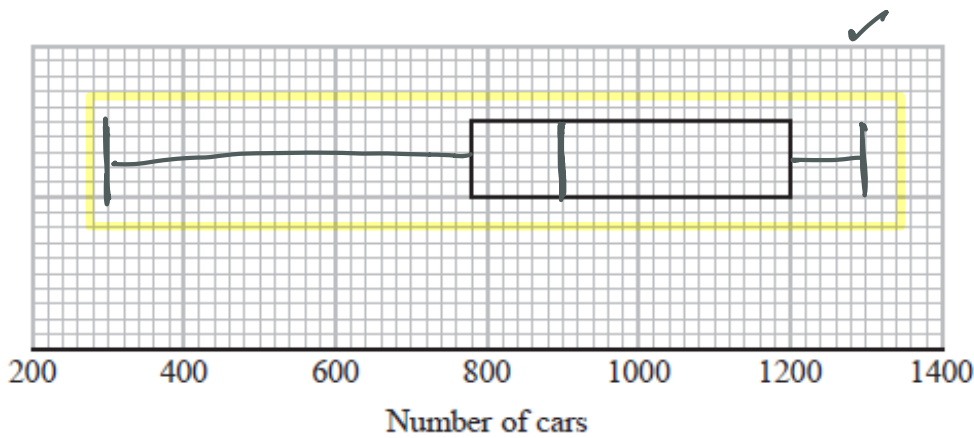
3 marks for 780, 1200, median plotted and both whiskers drawn

2 marks for two of the above

1 mark for any one of the above

	Number of cars
Least number	300
Lower quartile	780
Median	900
Upper quartile	1200
Range	1000

greatest $\rightarrow 300 + 1000$



- Use the information in the table to complete the box plot.
- Use the information in the box plot to complete the table.

(Total for Question 7 is 3 marks)

8 To cook rice

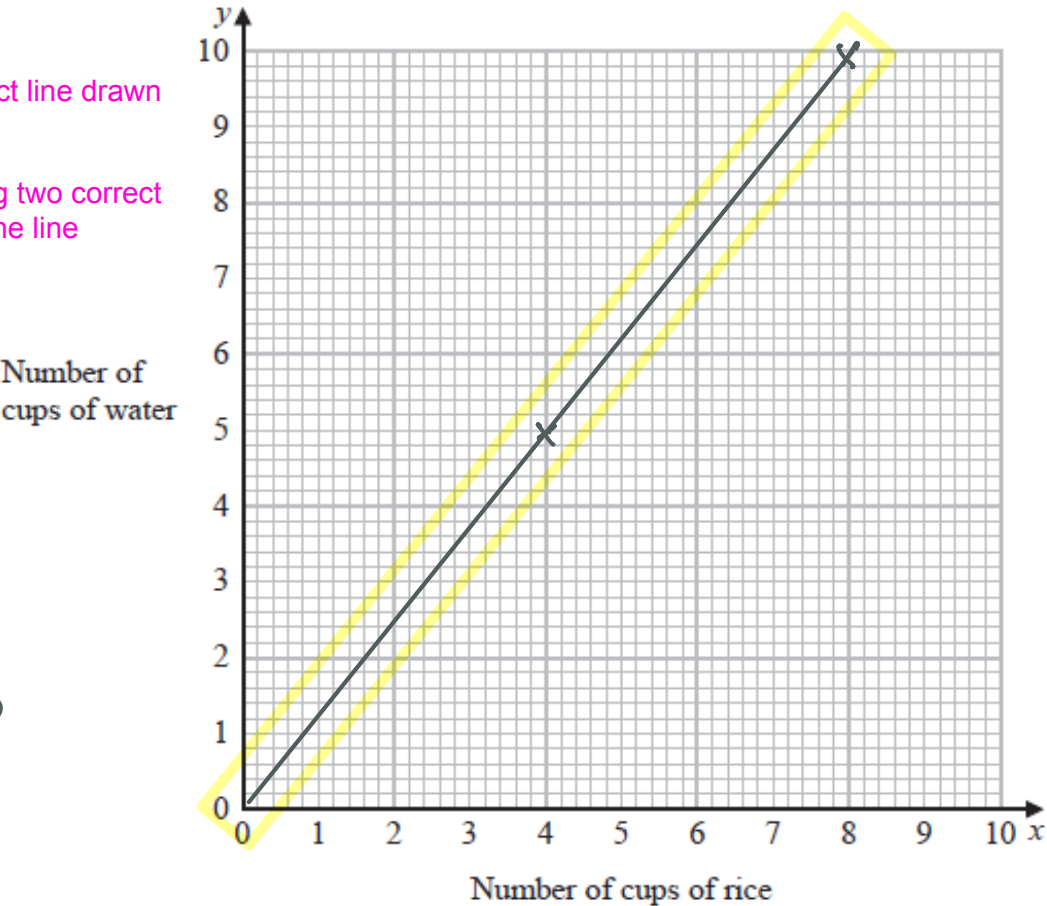
the number of cups of rice (x) : the number of cups of water (y) = 4 : 5

Use this information to draw a graph to show the relationship between the number of cups of rice and the number of cups of water needed to cook rice.

2 marks for correct line drawn

1 mark for plotting two correct points on the line

x : y
4 : 5
8 : 10



(Total for Question 8 is 2 marks)

*9 Work out $8.46 \div 0.15$

$$\frac{8.46}{0.15} = \frac{846}{15} = 846 \div 15 \quad \text{1 mark}$$

$$\begin{array}{r} 15 \\ 30 \\ 45 \\ 60 \\ 75 \\ 90 \\ 105 \end{array} \quad \begin{array}{r} 0 \quad 5 \quad 6 \cdot 4 \\ 15 \overline{) 846.60} \end{array} \quad \text{1 mark for digits 564}$$

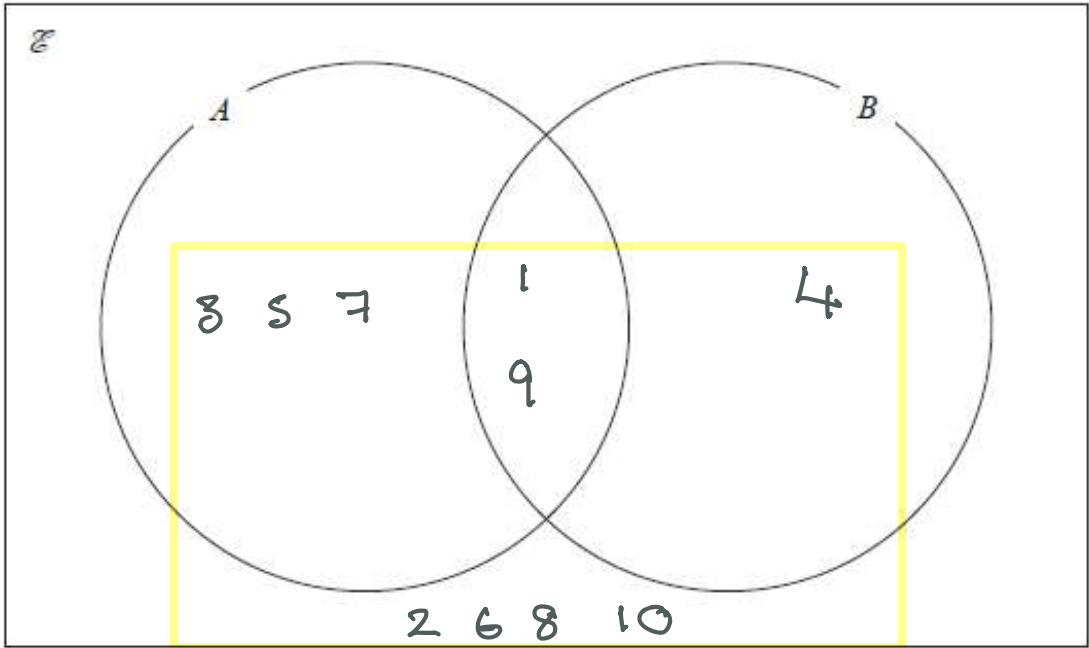
$$\underline{\underline{56.4}} \quad \text{Final mark}$$

(Total for Question 9 is 3 marks)

*10 $\mathcal{E} = \{1, 2, 3, 4, 5, 6, 7, 8, 9, 10\}$
 $A = \{\text{odd numbers}\}$
 $B = \{\text{square numbers}\}$

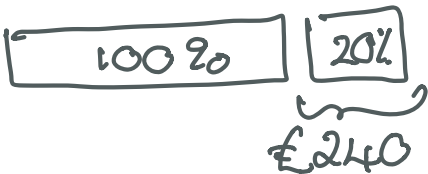
1 mark for one correct region
 2 marks for two or three correct regions
 3 marks for all correct

Complete the Venn diagram for this information.



((Total for Question 10 is 3 marks))

*11 The price of a holiday increases by 20%
 This 20% increase adds £240 to the price of the holiday.
 Work out the price of the holiday before the increase.



20% = £240
 x 5
 100% = £1200

Special case: if no marks
 awarded but an answer of 960 or
 1440 given 1 mark can be
 awarded

£1200 Final mark

((Total for Question 11 is 2 marks))

TOTAL FOR PAPER IS 31 MARKS