

Paper Reference 1MA1/1F
Pearson Edexcel
Level 1/Level 2 GCSE (9–1)

Total Marks

Mathematics
PAPER 1 (Non-Calculator)
Foundation Tier

Friday 19 May 2023 – Morning

Time: 1 hour 30 minutes

In the boxes below, write your name,
centre number and candidate number.

Surname					
Other names					
Centre Number					
Candidate Number					

YOU MUST HAVE

Ruler, protractor, compasses, writing and drawing equipment, Formulae Sheet (enclosed). Tracing paper may be used.

YOU WILL BE GIVEN

Diagram Booklet

Turn over

INSTRUCTIONS

Answer ALL questions.

Answer the questions in the spaces provided in this Question Paper or on the separate diagrams – there may be more space than you need.

You must SHOW ALL YOUR WORKING.

Diagrams are NOT accurately drawn, unless otherwise indicated.

CALCULATORS MAY NOT BE USED.

Turn over

INFORMATION

The total mark for this paper is 80

The marks for EACH question are shown in brackets – use this as a guide as to how much time to spend on each question.

There may be spare copies of some diagrams in case you need them.

**You may be provided with a model for Question 27
It is NOT accurate.**

Turn over

ADVICE

Read each question carefully before you start to answer it.

Try to answer every question.

Check your answers if you have time at the end.

Answer ALL questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

1. Write 38% as a decimal.

(Total for Question 1 is 1 mark)

2. Look at the diagram for Question 2 in the Diagram Booklet.

It shows a shaded shape.

What fraction of the shape is shaded?

(1 mark)

Answer space continues on the next page.

2. continued.

(Total for Question 2 is 1 mark)

Turn over

3. Here is a list of five numbers.

1·6

1·4

2·1

0·5

1·3

From the list, write down the smallest number.

(Total for Question 3 is 1 mark)

4. Work out

$$-9 + 5$$

(Total for Question 4 is 1 mark)

Turn over

5. Solve

$$p - 2 = 3$$

$$p = \underline{\hspace{10cm}}$$

(Total for Question 5 is 1 mark)

Turn over

6. Look at the diagram for Question 6 in the Diagram Booklet.

Freddie adds three labels to the diagram of a circle shown in the Diagram Booklet.

Explain why one of the labels is wrong.

(Total for Question 6 is 1 mark)

- 7. Write down THREE different factors
of 20
(2 marks)**

**Answer space continues on the next
page.**

7. continued.

_____ ,

_____ ,

(Total for Question 7 is 2 marks)

Turn over

8. Look at the diagram for Question 8 in the Diagram Booklet.

It shows two angles marked X and 50°

**(a) Work out the size of the angle marked X
(2 marks)**

_____o

(continued on the next page)

Turn over

8. continued.

A student says that an angle of 50° is an obtuse angle.

The student is wrong.

(b) Explain why.

(1 mark)

(Total for Question 8 is 3 marks)

Turn over

9. Look at the diagram for Question 9 in the Diagram Booklet.

It shows a grid.

(a) Write down the coordinates of point B

(1 mark)

(_____ , _____)

(continued on the next page)

9. continued.

**(b) On the grid in the
Diagram Booklet, plot the point
with coordinates $(4, -2)$
Label this point C
(1 mark)**

**(c) Write down the coordinates of
the midpoint of AB
(1 mark)**

(_____ , _____)

(continued on the next page)

Turn over

9. continued.

- (d) On the grid in the
Diagram Booklet, draw the line
with equation $y = -4$
(1 mark)**

(Total for Question 9 is 4 marks)

10. Max sees this special offer in a shop.

Buy one large plate and get one small plate for half the normal price.

The normal price of a large plate is £2

The normal price of a small plate is 80 pence

Max wants to buy 6 large plates and 6 small plates using this offer.

He has £15

(continued on the next page)

10. continued.

Has Max got enough money?

**You must show how you get your
answer.**

(4 marks)

**Answer space continues on the next
two pages.**

Turn over

10. continued.

Turn over

10. continued.

(Total for Question 10 is 4 marks)

Turn over

11. A total of 700 tickets were on sale for a football match.

452 of the tickets were sold.

(a) How many tickets were NOT sold?

(2 marks)

Answer space continues on the next page.

11. (a) continued.

(continued on the next page)

11. continued.

For a different football match,

297 tickets were sold for

£9·50 each.

399 tickets were sold for

£19·50 each.

(b) Work out an estimate for the total amount of money paid for these tickets.

You must show all your working.

(3 marks)

Answer space continues on the next page.

Turn over

11. (b) continued.

£ _____

(continued on the next page)

Turn over

11. continued.

**(c) Is your answer to part (b)
an underestimate or an
overestimate?**

Give a reason for your answer.

(1 mark)

(Total for Question 11 is 6 marks)

Turn over

12. Here are six numbers.

13

5

4

9

3

8

Work out the mean.

(2 marks)

**Answer space continues on the next
page.**

12. continued.

(Total for Question 12 is 2 marks)

Turn over

13. (a) Simplify

$$\frac{15w}{3}$$

(1 mark)

(continued on the next page)

Turn over

13. continued.

(b) Simplify

$$19 + 5p + 4q - 7p + q$$

(2 marks)

(continued on the next page)

Turn over

13. continued.

(c) Factorise

$$8y - 6$$

(1 mark)

(Total for Question 13 is 4 marks)

Turn over

14. Last week, 73% of the tickets sold at a cinema were adult tickets.

- (a) What percentage of the tickets sold were NOT adult tickets?
(1 mark)**

_____ %

(continued on the next page)

14. continued.

Some people watched a film at the cinema.

**number of adults : number of children
= 2 : 5**

**(b) What fraction of these people
were adults?
(1 mark)**

(continued on the next page)

Turn over

14. continued.

On Friday,

**500 people watched a film at the
cinema.**

70% of these people were children.

On Saturday,

**720 people watched the film at the
cinema.**

$\frac{5}{8}$ of these people were children.

**Kasim thinks more children watched
the film on Friday than on Saturday.**

(continued on the next page)

Turn over

14. continued.

(c) Is Kasim correct?

**You must show how you get your
answer.**

(3 marks)

**Answer space continues on the
next page.**

Turn over

14. (c) continued.

(Total for Question 14 is 5 marks)

Turn over

15. Work out

$$\frac{6}{7} \times \frac{5}{12}$$

Give your answer as a fraction in its simplest form.

(2 marks)

Answer space continues on the next page.

Turn over

15. continued.

(Total for Question 15 is 2 marks)

Turn over

**16. Look at the information for
Question 16 in the Diagram Booklet.
It is the list of ingredients for making
20 biscuits.**

Harry wants to make 60 biscuits.

How much flour does Harry need?

(2 marks)

**Answer space continues on the next
page.**

16. continued.

_____ grams

(Total for Question 16 is 2 marks)

Turn over

17. There are 200 counters in a bag.

38 counters are red.

52 counters are blue.

The rest of the counters are yellow or green.

There are the same number of yellow counters as green counters.

What percentage of the counters in the bag are yellow?

(4 marks)

Answer space is on the next two pages.

17. continued.

Turn over

17. continued.

_____ %

(Total for Question 17 is 4 marks)

Turn over

18. Naomi has **B** bags of apples and **C** crates of apples.

There are **5** apples in each bag.

There are **28** apples in each crate.

Naomi has a total of **T** apples.

Write a formula for **T** in terms of

B and **C**

(3 marks)

Answer space continues on the next page.

18. continued.

(Total for Question 18 is 3 marks)

Turn over

19. Here are the first five terms of an arithmetic sequence.

−5 3 11 19 27

Find an expression, in terms of n , for the n th term of this sequence.

(2 marks)

Answer space continues on the next page.

19. continued.

(Total for Question 19 is 2 marks)

Turn over

20. Work out

$$8.46 \div 0.15$$

(3 marks)

Answer space continues on the next page.

20. continued.

(Total for Question 20 is 3 marks)

Turn over

21. Work out

$$7\frac{3}{8} - 2\frac{1}{2}$$

**Give your answer as a mixed number.
(3 marks)**

**Answer space continues on the next
page.**

21. continued.

(Total for Question 21 is 3 marks)

Turn over

**22. A cube has a total surface area of
 150 cm^2**

Work out the volume of the cube.

(4 marks)

**Answer space continues on the next
page.**

22. continued.

_____ **cm³**

(Total for Question 22 is 4 marks)

Turn over

23. The table shows information about the daily rainfall in a town for 60 days.

Rainfall (R mm)	Frequency
$0 \leq R < 5$	5
$5 \leq R < 10$	25
$10 \leq R < 15$	15
$15 \leq R < 20$	10
$20 \leq R < 25$	5

(continued on the next page)

Turn over

23. continued.

**Look at the diagram for Question 23
in the Diagram Booklet.**

It shows a blank grid.

**On the grid, draw a frequency
polygon for the information in the
table on the previous page.**

(Total for Question 23 is 2 marks)

24. Look at the diagram for Question 24 in the Diagram Booklet.

It shows an incomplete Venn Diagram.

$$\mathcal{E} = \{1, 2, 3, 4, 5, 6, 7, 8, 9, 10\}$$

$$A = \{\text{odd numbers}\}$$

$$B = \{\text{square numbers}\}$$

(a) Complete the Venn diagram in the Diagram Booklet for this information.

(3 marks)

(continued on the next page)

24. continued.

Remember:

$$\mathcal{E} = \{1, 2, 3, 4, 5, 6, 7, 8, 9, 10\}$$

$$A = \{\text{odd numbers}\}$$

$$B = \{\text{square numbers}\}$$

A number is chosen at random from the universal set \mathcal{E}

- (b) Find the probability that this number is in the set B'**
(2 marks)

Answer space continues on the next page.

Turn over

24. (b) continued.

(Total for Question 24 is 5 marks)

Turn over

**25. Look at the diagram for Question 25
in the Diagram Booklet.**

**It shows a scatter graph with
information about the ages and
weights of some babies.**

(continued on the next page)

25. continued.

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

(1 mark)

(continued on the next page)

Turn over

25. continued.

Another baby has a weight of 6.0 kg

- (b) Using the scatter graph in the Diagram Booklet, find an estimate for the age of this baby.**
(2 marks)

_____ months

(Total for Question 25 is 3 marks)

Turn over

**26. 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.**

(2 marks)

**Answer space continues on the next
page.**

26. continued.

£ _____

(Total for Question 26 is 2 marks)

Turn over

27. Look at the diagram for Question 27 in the Diagram Booklet.

You may be provided with a model.

They show a solid cylinder on a horizontal floor.

$$\text{pressure} = \frac{\text{force}}{\text{area}}$$

The cylinder has a

volume of 1200 cm³

height of 40 cm

The cylinder exerts a force of 90 newtons on the floor.

(continued on the next page)

Turn over

27. continued.

**Work out the pressure on the floor
due to the cylinder.**

(3 marks)

**Answer space continues on the next
two pages.**

Turn over

27. continued.

Turn over

27. continued.

_____ newtons/cm²

(Total for Question 27 is 3 marks)

28. Look at the diagram for Question 28 in the Diagram Booklet.

It shows two intersecting straight lines on a grid.

Use the graphs to solve the simultaneous equations

$$2 - 2y = x$$

$$2y = 3x - 22$$

(1 mark)

Answer space continues on the next page.

28. continued.

x = _____

y = _____

(Total for Question 28 is 1 mark)

Turn over

29. Work out the value of

$$\frac{4^{-6} \times 4^9}{4}$$

(2 marks)

Answer space continues on the next page.

29. continued.

(Total for Question 29 is 2 marks)

Turn over

**30. Write down the exact value
of $\cos 60^\circ$**

(Total for Question 30 is 1 mark)

31. Look at the diagram for Question 31 in the Diagram Booklet.

It is a probability tree diagram showing the probabilities that Shayla will work at home or will work at the office on two days next week.

Work out the probability that Shayla will work at home on Monday and work at the office on Friday.

(2 marks)

Answer space continues on the next page.

31. continued.

(Total for Question 31 is 2 marks)

TOTAL FOR PAPER IS 80 MARKS

END OF PAPER
