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

Total Marks

Mathematics
PAPER 2 (Calculator)
Foundation Tier

Wednesday 7 June 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						

V75149A

Pearson

YOU MUST HAVE

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

YOU WILL BE GIVEN

Diagram Booklet

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 BE USED.

If your calculator does not have a π button, take the value of π to be 3·142 unless the question instructs otherwise.

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.

You may be provided with models for Question 14
They are NOT accurate.

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

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 6184 correct to the nearest hundred.

_____

(Total for Question 1 is 1 mark)

2. Write $0 \cdot 7$ as a fraction.

_____

(Total for Question 2 is 1 mark)

3. Change 9 metres into centimetres.

_____ centimetres

(Total for Question 3 is 1 mark)

4. Simplify

$3 \times 4t$

_____

(Total for Question 4 is 1 mark)

5. Here is a list of five numbers.

20 40 60 80 100

One of these numbers is a multiple of

25

Which number?

_____

(Total for Question 5 is 1 mark)

6. Shari has a fair ordinary dice.

She rolls the dice once.

(a) Look at the diagram for Question 6(a) in the Diagram Booklet.

It shows a probability scale.

On the probability scale, mark the probability that Shari gets the number 7

(1 mark)

(continued on the next page)

6. continued.

(b) Look at the diagram for Question 6(b) in the Diagram Booklet.

It shows a probability scale.

On the probability scale, mark the probability that Shari gets an even number.

(1 mark)

(Total for Question 6 is 2 marks)

7. Look at the diagram for Question 7(a) and 7(b) in the Diagram Booklet.

It shows a triangle **ABC**

The triangle is accurately drawn.

(a) Measure the length of **AC**

(1 mark)

_____ cm

(continued on the next page)

7. continued.

(b) Measure the size of angle B

(1 mark)

°

(continued on the next page)

7. continued.

Look at the diagram for Question 7(c) in the Diagram Booklet.

It shows a different triangle **PQR**

QP = QR

(c) Write down the mathematical name of this triangle.

(1 mark)

(Total for Question 7 is 3 marks)

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

It shows three motorway service stations

P, **Q** and **R** on a map.

The map has a scale of **1 cm = 4 km**

PQ represents **8 cm**

QR represents **16 cm**

Work out the real distance from

P to **R**

(3 marks)

Answer space is on the next page.

8. continued.

_____ km

(Total for Question 8 is 3 marks)

9. Here are the first five terms of a sequence.

3 8 13 18 23

(a) Write down the next term of this sequence.

(1 mark)

(continued on the next page)

9. continued.

(b) Write down the ratio of the second term to the fourth term. Give your ratio in its simplest form.

(2 marks)

(Total for Question 9 is 3 marks)

10. Look at the diagram for Question 10 in the Diagram Booklet.

It shows a graph that can be used to find the cost of parking a car in a car park for up to 8 hours.

(a) Use the graph to find the cost of parking a car for 4 hours.

(1 mark)

£_____

(continued on the next page)

10. continued.

Justin drives into the car park at **08 00** in the morning.

When he drives out of the car park he has to pay **£9**

(b) At what time does Justin drive out of the car park?

(3 marks)

Answer space continues on the next page.

10. (b) continued.

(Total for Question 10 is 4 marks)

---

11. Look at the table for Question 11 in the Diagram Booklet.

It shows information about the weights of the people in a hotel lift.

Show that the total weight of the people in the lift is less than

1200 kg

(3 marks)

Answer space continues on the next page.

11. continued.

(Total for Question 11 is 3 marks)

12. Look at the diagram for Question 12(a) in the Diagram Booklet.

It shows a grid.

Shape **A** is reflected in a mirror line to give shape **B**

(a) On the grid in the Diagram Booklet, draw the mirror line.

(1 mark)

(continued on the next page)

12. continued.

Look at the diagram for Question 12(b) in the Diagram Booklet.

It shows a grid.

(b) Alex is asked to reflect shape **P** in the **x**–axis.

The diagram shows the reflection, shape **R**, that Alex draws.

Explain the mistake Alex has made.

(1 mark)

Answer lines are on the next page.

12. (b) continued.

(Total for Question 12 is 2 marks)

13. There are 50 teachers in a school.

This is $\frac{1}{16}$ of the total number of people in the school.

Work out the total number of people in the school.

(Total for Question 13 is 2 marks)

14. Look at the diagram for Question 14 in the Diagram Booklet.

You may be provided with two models.

The models show a packet and a box.

The diagram shows a packet and a box.

Packets of sweets are put into boxes.

(continued on the next page)

14. continued.

Each packet is a cuboid, 80 mm by 60 mm by 20 mm

Each box is a cuboid, 72 cm by 48 cm by 24 cm

Work out the greatest number of packets that can be put into each box.

(4 marks)

Answer space continues on the next page.

14. continued.

(Total for Question 14 is 4 marks)

15. Look at the diagram for Question 15 in the Diagram Booklet.

It shows a fair ordinary dice and a fair 8–sided spinner.

(continued on the next page)

15. continued.

Charlie throws the dice once and spins the spinner once.

Is Charlie more likely to get

a number less than 3 on the dice

OR a number greater than 5 on the spinner?

You must show all your working.

(3 marks)

Answer space continues on the next two pages.

15. continued.

15. continued.

(Total for Question 15 is 3 marks)

16. Paulo drives at an average speed of **56 km/h** for **1** hour **45** minutes.

Work out the distance Paulo drives.

(3 marks)

Answer space continues on the next page.

16. continued.

_____ km

(Total for Question 16 is 3 marks)

17. There are 3 cinemas A, B and C

The mean number of seats per cinema is 380

There are 350 seats in cinema A

There are 250 seats in cinema B

Work out the number of seats in cinema C

(4 marks)

Answer space continues on the next two pages.

17. continued.

17. continued.

(Total for Question 17 is 4 marks)

18. Asha buys 180 cans of cola.

The cans are sold in packs.

There are 12 cans in each pack.

Each pack costs £3

(a) Work out the total cost of the cola Asha buys.

(3 marks)

Answer space continues on the next page.

18. (a) continued.

£_____

(continued on the next page)

18. continued.

Ethan buys a box of 24 cans of lemonade for £7

There are 330 ml of lemonade in each can.

(b) Work out the cost of 100 ml of lemonade.

Give your answer correct to the nearest penny.

(3 marks)

Answer space continues on the next page.

18. (b) continued.

_____ pence

(Total for Question 18 is 6 marks)

19. 240 people work at a factory.

Of these people

150 have a car

110 have a bicycle

65 of the people who have a bicycle do NOT have a car.

(continued on the next page)

19. continued.

(a) Look at the diagram for Question 19(a) in the Diagram Booklet.

It shows an incomplete frequency tree.

Use the information on the previous page to complete the frequency tree in the Diagram Booklet.

(3 marks)

(continued on the next page)

19. continued.

(b) What percentage of the **150** people who have a car also have a bicycle?

(2 marks)

_____%

(Total for Question 19 is 5 marks)

20. (a) Work out the value of

$$\frac{25 - \sqrt{43 \cdot 87}}{6 + 2 \cdot 1^2}$$

Write down all the figures on your calculator display.

(2 marks)

(continued on the next page)

20. continued.

(b) Work out the value of the reciprocal of $0 \cdot 625$

(1 mark)

(Total for Question 20 is 3 marks)

21. Write 60 as a product of its prime factors.

(2 marks)

Answer space continues on the next page.

21. continued.

(Total for Question 21 is 2 marks)

22. There are 48 counters in a bag.

There are only red counters and blue counters in the bag.

number of red counters :
number of blue counters = 1 : 2

Helen has to work out how many red counters are in the bag.

She says,

"There are 24 red counters in the bag because 1 is half of 2 and 24 is half of 48"

(continued on the next page)

22. continued.

Is Helen correct?

You must give a reason for your answer.

(Total for Question 22 is 1 mark)

23. $-2 \leq n < 5$

n is an integer.

(a) Write down the greatest possible value of n

(1 mark)

(continued on the next page)

23. continued.

(b) Look at the diagram for Question 23(b) in the Diagram Booklet.

It shows a number line.

On the number line, show the inequality

$-4 \leq m < 1$

(2 marks)

(continued on the next page)

23. continued.

(c) Solve

$$\frac{2}{5}t - 4 < 6$$

(3 marks)

Answer space continues on the next page.

23. continued.

(Total for Question 23 is 6 marks)

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

It shows a triangle **ABC** and a rectangle **PQRS**

In triangle **ABC**:

AB is marked **6x**

BC is marked **8**

Angle **ABC** is a right angle.

In rectangle **PQRS**:

PQ is marked **5**

PS is marked **4x – 1**

(continued on the next page)

24. continued.

All measurements are in centimetres.

The area of the triangle is $10\ cm^2$ greater than the area of the rectangle.

Work out the value of x

(4 marks)

Answer space continues on the next two pages.

24. continued.

Turn over

24. continued.

$x =$ _____

(Total for Question 24 is 4 marks)

25. Last year a family recycled 800 kg of household waste.

57% of this waste was paper and glass.

weight of paper recycled : weight of glass recycled = 12 : 7

Calculate the weight of glass the family recycled.

(3 marks)

Answer space continues on the next two pages.

25. continued.

25. continued.

_____ **kg**

(Total for Question 25 is 3 marks)

26. A number, n, is rounded to 1 decimal place.

The result is $12 \cdot 7$

Complete the error interval for n

_____ ≤ n < _____

(Total for Question 26 is 2 marks)

27. Tamsin buys a house with a value of

£150 000

The value of Tamsin's house increases by 4% each year.

Rachel buys a house with a value of

£160 000

The value of Rachel's house increases by 1·5% each year.

At the end of 2 years, whose house has the greater value?

You must show how you get your answer.

(4 marks)

Answer space is on the next two pages.

27. continued.

27. continued.

(Total for Question 27 is 4 marks)

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

It shows five graphs labelled **A–E**

The table on the following page shows the equations of these graphs.

(continued on the next page)

28. continued.

Equation	Graph
$y = x^2 - 4x$	
$y = x + 3$	
$y = x^3 - 2$	
$y = \frac{1}{x}$	
$y = 5 - 2x$	

Match the letter of each graph with its equation.

(Total for Question 28 is 3 marks)

TOTAL FOR PAPER IS 80 MARKS

END OF PAPER