

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

Total Marks
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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					

## **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  $\pi$  button, take the value of  $\pi$  to be  $3.142$  unless the question instructs otherwise.**

**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.**

**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.**

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**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.

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(Total for Question 1 is 1 mark)

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2. Write  $0.7$  as a fraction.

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(Total for Question 2 is 1 mark)

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3. Change 9 metres into centimetres.

\_\_\_\_\_ centimetres

(Total for Question 3 is 1 mark)

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4. Simplify  
 $3 \times 4t$

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(Total for Question 4 is 1 mark)

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**5. Here is a list of five numbers.**

**20**

**40**

**60**

**80**

**100**

**One of these numbers is a multiple of 25**

**Which number?**

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**(Total for Question 5 is 1 mark)**

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**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)**

**(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)**

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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

- (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**

$$\mathbf{QP = QR}$$

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

**(1 mark)**

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**(Total for Question 7 is 3 marks)**

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**Turn over**

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 continues on the next page.

8. continued.

\_\_\_\_\_ km

(Total for Question 8 is 3 marks)

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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)

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(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)

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(Total for Question 9 is 3 marks)

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**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)**

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**(Total for Question 10 is 4 marks)**

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**Turn over**

**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)**

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**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)**

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**(Total for Question 12 is 2 marks)**

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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.**

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**(Total for Question 13 is 2 marks)**

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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.

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.

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**(Total for Question 14 is 4 marks)**

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

**It shows a fair ordinary dice and a fair 8-sided spinner.**

**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 page.**

**15. continued.**

**(Total for Question 15 is 3 marks)**

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**Turn over**

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

Work out the distance Paulo drives.

\_\_\_\_\_ km

(Total for Question 16 is 3 marks)

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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 page.

17. continued.

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(Total for Question 17 is 4 marks)

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Turn over

**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.

£ \_\_\_\_\_

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)

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Turn over

**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.**

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

**It shows an incomplete frequency tree.**

**Use the information above 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)

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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)

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(continued on the next page)

**20. continued.**

- (b) Work out the value of the reciprocal of  $0.625$**   
**(1 mark)**

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**(Total for Question 20 is 3 marks)**

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

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**(Total for Question 21 is 2 marks)**

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**Turn over**

**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.**

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**(Total for Question 22 is 1 mark)**

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**23.  $-2 \leq n < 5$**

**$n$  is an integer.**

- (a) Write down the greatest possible value of  $n$**   
**(1 mark)**

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- (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)

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(Total for Question 23 is 6 marks)

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Turn over

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  **$4x - 1$**

All measurements are in centimetres.

The area of the triangle is  **$10 \text{ cm}^2$**  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)**

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**Turn over**

**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 page.**

**25. continued.**

\_\_\_\_\_kg

**(Total for Question 25 is 3 marks)**

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**Turn over**

26. A number,  $n$ , is rounded to 1 decimal place.  
The result is  $12.7$

Complete the error interval for  $n$

$$\underline{\hspace{2cm}} \leq n < \underline{\hspace{2cm}}$$

(Total for Question 26 is 2 marks)

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- 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 continues on the next page.**

**27. continued.**

**(Total for Question 27 is 4 marks)**

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**Turn over**

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

It shows five graphs labelled **A–E**

The table below shows the equations of these graphs.

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)

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**TOTAL FOR PAPER IS 80 MARKS**

**END OF PAPER**

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